NORTHEAST DEALER ISSUE
Pages 9-16

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 3 | Subscription Rates: $5 for 1 year, $9 for 2 years | AUGUST 6, 1956 | Accepted as Controlled Circulation Publication at Minneapolis, Minn. | No. 32

Soil Economics Discussed by Illinois Group

Speaker Says It's Cheaper to Buy N Than to Grow It

URBANA, ILL.—New tillage practices aren't going to reduce the need for fertilizer, in the opinion of R. S. Stauffer, associate professor of soil physics at the University of Illinois College of Agriculture.

If anything, these new practices will call for greater amounts of fertilizers, Mr. Stauffer told representatives of the fertilizer industry and allied fields attending the Illinois Fertilizer Conference July 26 and 27 at the University of Illinois in Urbana.

He spoke specifically about deep tillage and dry or dead mulch tillage, both of which need more fertilization than more conventional methods.

Mr. Stauffer said phosphorus and potassium aren't so much of a problem—"It takes a certain amount for certain yields." He believes the big emphasis now should be on nitrogen to answer such questions as when to use nitrogen fertilizer on what crops and how it is affected by the weather.

W. J. Mumm, plant breeder for the Crow Hybrid Seed Corn Co., reported however, that his company believes fertilization to be useless without a sound, overall management program. He told the conference that most central and northern Illinois soils are capable of producing 100-bushel yields. "But those don't just

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New England Fertilizer Conference Announced

WASHINGTON, D.C.—The annual New England Fertilizer Conference, conducted in cooperation with the National Plant Food Institute, will be held at the Bald Peak Colony Club, Melvin Village, New Hampshire, on Sept. 12, Dr. Russell Coleman, executive vice president of the Institute has announced. Sessions will begin at 10 a.m., and conclude at approximately 3 p.m.

On the morning program, L. A. Zehner of the Federal Reserve Bank of Boston will be the moderator of a panel of New England experts who will discuss "The Future of New England Agriculture."

In the afternoon, Dr. W. K. Burkett of the University of New Hampshire, will speak on "Effects of Fertilizer Usage on Cost of Production of Farm Products." He will be followed by two speakers, Ford Prince of the University of New Hampshire and George Frick of the United States Department of Agriculture, who will discuss the economics of pasture improvement.

The Conference will be concluded with a banquet at 7 p.m., Dr. Coleman said.

No Significant Change in Potash Tonnages Seen

WASHINGTON—Although the annual report of potash deliveries in the domestic and foreign markets has not yet been compiled, officials of the American Potash Institute have indicated confidence that the total tonnage may be up slightly for the past year because of heavier exports. The import figure is expected to show an upward trend as well.

In the latter category, however, government figures are not yet available on the number of tons of potash imported into the U.S.

It is possible that domestic uses of potash during the past year may be less than the previous period, although there has been a slightly stepped-up chemical use of potash. API sources indicated that usage in this category may show an increase of some 20,000 tons over last year.

The American Potash Institute's annual report is in the process of being compiled, but no date has yet been named for its release.

Availability of Soil Bank Cash Before Election May Stimulate More Fall Sales

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — Recent reports from the soil bank unit of USDA indicate that the pocketbooks of farmers in the Great Plains states and the Corn Belt may be bulging with federal government checks later this year.

As far as these farmers are concerned this is "found" money.

It is cash in the pocket which may be spent or committed for fertilizer materials this fall or next spring or for pesticidal chemicals before harvest in such crops as cotton and spring wheat.

Reporting as of July 20, 1956, USDA says that in the "corn farm community" there will be available for corn crop farmers more than $112 million in federal government checks before election this year. For all types of wheat, the federal government lettuce will amount to more than $31 million, but most of that largesse will go to blown-out or drouthed-out wheat farmers. Some small part of that payment will be made to farmers in the spring wheat area in the Dakotas where early drouth killed off that crop.

In that area farmers will obtain soil bank certificates valued at a basic figure of $1.20 bu. times the normal yield for that crop in the county where grown. For the winter wheat area, the value of the wheat soil bank certificates for the 1956 crop will be between $4 and $6 an acre. This is an inconsequential amount to sellers of materials to those farmers, but those small payments are the nip-and-tuck which will keep them in business producing wheat next year.

As USDA announced its soil bank commitments last week, it did not mention a payment in kind plan for farmers cooperating in the soil bank program, which will be announced shortly. Such payment in kind will be valued at 105% in value (only) for the dollar value of the soil bank certificates.

This means a $100 soil bank cash certificate will be worth that in terms of in kind payment. But such a soil bank option may not be redeemed for full in kind payment value. This is the gimmick

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Industry Men From Wide Area Take Part In Southwestern Fertilizer Conference

GALVESTON, TEXAS — The Southwestern Fertilizer Conference and Grade Hearing held at the Buccaneer Hotel here July 18-20 broke all previous attendance records with 300 fertilizer manufacturers, college department heads, state fertilizer control officials, material suppliers and their wives and children.

The meeting was launched Wednesday evening, July 18, with a social period in the main ballroom of the hotel. The general meeting commenced the next morning with Stanley Hackett, president, Dixie Fertilizer Co., Shreveport, La., presiding. A welcome address was given by J. C. Powledge, National Hotel Co., Galveston, Texas, and the response by J. D. Dawson, Jr., Fidelity Chemical Co., Houston, Texas.

The technical session was handled by Joe Sharp, manager of technical service, Spencer Chemical Co., Kansas City, Mo., and Bill Tyler, Longhorn Construction Co., Sulphur Springs, Texas. Two different approaches on granulation were presented. Joe Sharp discussed the granulation process using the TVA-type ammoniator and Bill Tyler pointed out the merits of a granulation plant using a pug mill. Fertilizer manufacturers present evidenced great interest in hearing about these methods of manufacturing granular materials.

Dr. Russell Coleman, executive vice president of the National Plant Food Institute, Washington, D.C., talked on the various angles of the Soil Bank. He asserted that fertilizers, when used correctly, could be utilized to get our nation out of the present economic plight brought about by farm surpluses. Dr. Coleman pointed out how we could plant less and produce less, but still make a good profit through the efficient use of fertilizers.

Dr. Arthur Smith, vice president of First National Bank, Dallas, gave a talk on the national farm problem. Dr. Smith said that we have increased our cultivatable land by 33⅓% since 1910 and that during this period tremendous quantities of fertilizers and insecticides have been used. He declared that our farm educational system has been improved until we now have the best educated farmers in the world. It was further pointed out that our farms are highly mechanized and the land that formerly produced hay to sustain mules and horses can now be used for other products. Also to be considered is the effect of rural electrification on the production program.

On the consumption side of the farm problem, Dr. Smith pointed out several changes that have affected the situation. He mentioned that our eating habits have changed, that we tend to stay away from high energy foods, synthetic fibers have been discovered, and our past farm policies have stimulated foreign production and that our tariff policies and foreign policies have practically eliminated foreign trade. This added to surpluses. Dr. Smith jokingly said that he had a solution to the farm problem called the "Smith Plan" and that it was "very sim-

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Wildgrass Crossed With Wheat to Get Rust Resistance

WASHINGTON, D.C. — An announcement by the U.S. Department of Agriculture and the Missouri Experiment Station states that leaf rust resistance found in a wild grass has now been bred into wheat, thus gaining an objective long sought. After years of cooperative research by Federal and state workers, a potent gene for leaf rust resistance has been fixed into a Chinese Spring variety of common wheat.

The announcement states that very few varieties of common wheat are highly resistant to any of the 22 rust races. Some of the related wild grasses, however, are practically immune to this disease. One of these wild grasses is Aegilops umbellulata, a native of the Mediterranean areas.

That grass, however, has only 2 sets of 7 chromosomes whereas common wheat has 6 sets of 7. Because of this difference, scientists have

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LeRoy Rau

STAUFFER APPOINTMENT — LeRoy Rau has been appointed to handle the sales of the complete line of chemicals of the agricultural chemical division of Stauffer Chemical Company's midwest territory, it has been announced by Porter Williams, regional manager. Mr. Rau will make his headquarters at the Omaha office of Stauffer and cover the western North Dakota, South Dakota, Nebraska, southeast Wyoming and northeast Colorado sales regions. He was formerly associated with Chester B. Brown Co., Morrill, Nebraska, and its subsidiary, Brown Farm Chemical Co., Scottsbluff, Nebraska.

Monsanto Second Quarter Earnings, Sales Show Gain

ST. LOUIS—Sales of Monsanto Chemical Co. and its consolidated subsidiaries for the second quarter of 1956 were $139,645,541 compared to adjusted sales of $133,495,712 for the same period in 1955, it was announced here recently.

Second quarter 1956 earnings of $10,719,295 amounted to 51¢ a share of common stock, an increase from 1955 second quarter earnings of $10,287,348 which amounted to 49¢ a share.

Sales for the first six months this year were $280,256,773 and earnings were $1.05 per share compared to sales of $266,203,707 and earnings of $1.16 a share for the first six months of last year.

These figures include those of the Lion Oil Company Division for both years. Lion was merged into Monsanto Sept. 30, last year.

The board of directors declared a regular 25¢ a share dividend on the company's $2 par value common stock, payable Sept. 15 to holders of record Aug. 24.

BORON DEFICIENCIES

COLUMBIA, MO.—The addition of borax at rates up to 25 to 30 lb. an acre is beneficial in increasing yields and maintaining stands on many Missouri soils, according to Marshall Christy, University of Missouri extension soils specialist. He said that boron deficiencies have shown up in alfalfa fields during the past dry years.

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Atlas Powder Co. Half Year Net Shows 32% Gain

WILMINGTON—Atlas Powder Co. had net earnings of $2,235,317, or $2.99 a common share, in the first half of 1956, Ralph K. Gottshall, president, has announced. This was 32% above the $1,688,183, or $2.23 a common share, earned in the same period last year.

Second quarter net earnings for 1956 were $1,275,464, or $1.71 a common share, against $923,845, or $1.10 a common share, for the second quarter of 1955.

Sales and operating revenues from explosives and chemicals in the first six months of this year totaled $32,960,489, up 7% from the $30,861,192 for the first half of 1955.

Operating results of Aquaness Corp., which has been a department of Atlas' chemicals division since January of this year, have been included in both the 1955 and 1956 figures.

American Chemical Paint Entertains Garden Writers

AMBLERS, PA.—The American Chemical Paint Co. of Ambler, Pa. held open house for members of the Garden Writers Association of America and guests recently.

After a welcome by Gerald C. Romig, vice president, Dr. Robert Beatty, director of research, explained to the group how herbicides and growth regulators are formulated. Dr. William Allen then conducted the writers on a tour of the plant, laboratories and other facilities, answering many questions.

The day concluded with a view of grass plot experiments and the unveiling of a new device for spraying weedkillers. Because of the success of the event, another open house will be scheduled in September.

Stauffer Announces Record Half Year Earnings, Sales

NEW YORK—Record six months earnings of $6,625,000 or $2.17 per share for the period ended June 30, 1956, were announced recently by Stauffer Chemical Co. Net earnings increased 9% from $6,089,000 or $2 per share during corresponding period in 1955. Net sales of $77,410,000 recorded a new high for the six months, up 11% from $69,787,000 during the comparable period of 1955.

Net sales for the three months ended June 30, 1956, increased to $40,897,000 from $36,513,000 in the previous quarter and $38,149,000 in the 1955 June quarter. Net earnings for the second quarter this year were $3,612,000 or $1.18 per share, compared with $3,013,000 or $.99 per share for the first quarter and $3,570,000, or $1.17 per share for the June quarter last year.

Hans Stauffer, president, reported to stockholders that "a net increase in sales volume was achieved in existing product lines, despite the downturn in fertilizers and in the textile and rubber industries which are important consumers of the company's products." He also reported that new products, new plant facilities and improved operating efficiencies contributed to sales and income improvement during the six months period.

The board of directors of the firm declared a dividend of 40¢ per share payable on Sept. 1, to stockholders of record on Aug. 14.

DU PONT STOCKHOLDERS

WILMINGTON—E. I. du Pont de Nemours & Co., Inc., was owned by 166,022 stockholders as of June 30, 1956, an increase of 2,884 over the number of holders recorded at the close of the first quarter of 1956, and an increase of 13,167 over the number on June 30, 1955.

R. T. Thompson

R. T. Thompson Named To CSC Agricultural Chemicals Sales Staff

NEW YORK—Commercial Solven Corp. has named R. T. Thompson Mount Vernon, Ga., to its agricultur chemicals marketing and distributi organization in the Southeast, accor ing to C. J. Watts, southeastern di trict manager for CSC agricultur chemicals department.

Mr. Thompson's sales responsibil ties will be in Georgia and Alabam He will make his headquarters in th company's Atlanta office. A graduat of the University of Georgia wher he received a bachelor of science de gree in agriculture, Mr. Thompso has been associated with the agricul tural extension service of that scho as a county agent.

Cotton Mechanization Conference to Hear Panel Discussion

ATLANTA—How to best adapt new machines and techniques to cotto farming will be analyzed here Aug. 2 by a panel on the program of th tenth annual Beltwide Cotton Me chanization Conference.

David S. Weaver, director of th North Carolina Extension Service will lead the discussion in which farmer, a farm equipment dealer, banker and a county agent will par ticipate.

Each panelist will discuss how bar riers to full mechanization of cotto production are being overcome, ana lyzing his particular role in this evo lution.

Conferees will hear I. R. Anderson, Sandersville, Ga., cotton producer; M. R. Powers, Columbia (S.C.) Farm Equipment Co.; William N. Downs, vice president, First National Bank & Trust Co., Macon, Ga., and W. L. Martin, Guntersville, Ala., Marshall County agent.

Approximately 600 representatives of the cotton industry, farm equip ment manufacturers, Cotton Belt lan grant colleges, the U.S. Departmen of Agriculture and farm organization are expected to attend the conferenc at the Biltmore, Aug. 22-24. The meet ing is being sponsored by the Nationa Cotton Council in cooperation with the University of Georgia and the above groups.

GARDEN SCHOOL SCHEDULED

CLEMSON, S.C.—A school for gar deners will be held here Aug. 14, with sessions on ornamental plant disease and insect control occupying an im portant part of the program. Clemso faculty members taking part in this portion of the day's activities are L W. Baxter, Joe Berley, Dr. W. M Epps, W. C. Nettles and F. W. Thode

hillips Grass and Fertilizer Demonstration roject Toured by Newspaper and Radio Men

BARTLESVILLE, OKLA. — About farm editors from midwestern d southern radio and television ations and newspapers and farm urnals toured the Phillips grass and rtilizer demonstration project at Adams ranch at Foraker, Okla., ar here July 27-28. Their visit was initiation on the ranch of the w guest house which was com- eted a few days before. The new ilding, completely equipped with eping quarters, kitchen, dining and creation space, will facilitate tours the demonstration projects and ll accommodate college and other oups for longer stays.

The project is located on a 33,- 00 acre ranch owned by K. S. dams, chairman of the board of he Phillips Petroleum Corp. It is et up to show on a large com- ercial scale how beef production an be increased through proper ange management. All aspects of rassland agriculture are being ested at the project, which is un- er the direction of W. E. (Dick) Whitsell.

The visitors inspected the plant rsery at the project, which con- ins approximately 200 different ecies of range and pasture plants.

Several promising new grasses for the Bluestem-Osage range are being studied at the nursery, a portion of which is devoted to experimental aster from breaking the cattle ranch- er, a fate which met many cattlemen in the past few years as a result of overgrazing during dry cycles. The pasture improvement program in- work under the supervision of Okla- homa A&M College.

One of the objectives of the pro- ject is to show that proper range management can prevent drouth dis- cludes proper periods of pasture rest- ing and water conservation, as well as the development of superior grasses.

The project also includes a por- tion of land in tame pastures, on which seeding and fertilizing exper- iments are being conducted.

To promote scientific study in range management problems, the Phillips firm has set up three scholarships in this field, which combine schooling with field study at the project. Two of these scholarships are now in ef- fect and the studies under way in- volve the first objective which is an inventory of range plant life and the development of a herbarium to dis- play the various types of plant life of the limestone range country.

Pacific Plant Food Assn. Names Chairmen for Nine Convention Committees

PORTLAND, ORE.—Frank Meek- er, president of the Pacific North- west Plant Food Assn. has announced chairmen and members of various committees for the group's 1956 an- nual convention scheduled to be held at Harrison Hot Springs, British Co- lumbia, Nov. 7-9.

General chairman of the convention will be Robert Allard, and program chairman, Lee Fryer. Other chairmen and their committee members were announced by Mr. Meeker as follows:

Registration and banquet: R. H. Goldberg, chairman; Russ Hays, Don Cochran.

Golf tournament: Robert Fulton, chairman; John Hooper, Jack Mc- Conkey.

Reception: Ferd Herpers, chair- man; and Reg. Davidson.

Entertainment: Lyman Judson, chairman.

Raffle: Leck Rowden, chairman.

Finance: Frank Taylor, chairman; and Bud Wolfkill.

Ladies entertainment: Joan Fulton, chairman; Jane Tremblay, and Flor- ence Waltersdorph.

Mr. Meeker said that committee chairmen will add to their committees from time to time before convention time.

ion Oil Wins afety Award

EL DORADO, ARK.—Lion Oil Co., division of Monsanto Chemical Co., s earned an award of honor from e National Safety Council for acci- nt-prevention records set by Lion mployes during 1955.

The award, which is the highest cognition for industrial safety hievement made by the council, was esented to Lion for "outstanding fety performance." Lion's company- de accident-frequency rate in 1955 as 68% better than the standard tablished by the National Safety ouncil for the top honor, and the mpany's accident-severity rate was % better than the council's par.

Felix N. Williams, vice president f Monsanto's Manufacturing oper- tions, acted for the National Safe- y Council in presenting the award o T. M. Martin, Lion president. Mr. Williams, speaking before rep- esentatives of all Lion's operating epartments, pointed out that the ompany's accident-prevention rec- rd has been steadily improving. He eviewed that in 1952, when the Lion organization won its first com- any-wide award of honor, the ac- ident-frequency rate within the ompany was 2.13 lost-time acci- ents per million-man-hours of ork, whereas in 1955 this fre- uency rate had dropped to 1.75.

In accepting the award on behalf of on employes, Mr. Martin stated that e company's accident-frequency te during last year established a w record in the company's history. evidence of continued improve- nt, he pointed out that the fre- ency rate for the first six months 1956 was down to .66.

In addition to the plaque, Lion will eive from the National Safety uncil a flag symbolizing the two ards of honor which have been won the company.

PROFITABLE PRODUCTION

ST. PAUL—In the past three years the official Minnesota X-Tra yield n contest, Donald and Emil Eick- f of Fountain, Fillmore County, e produced a total of 386 bu. of n from each of their fertilized es. The increase due to fertilizing is up to 205 bu. per acre for the ee years. Fertilizer bill was $87.55 acre—their return above ferti- r costs: $204.25 per acre.

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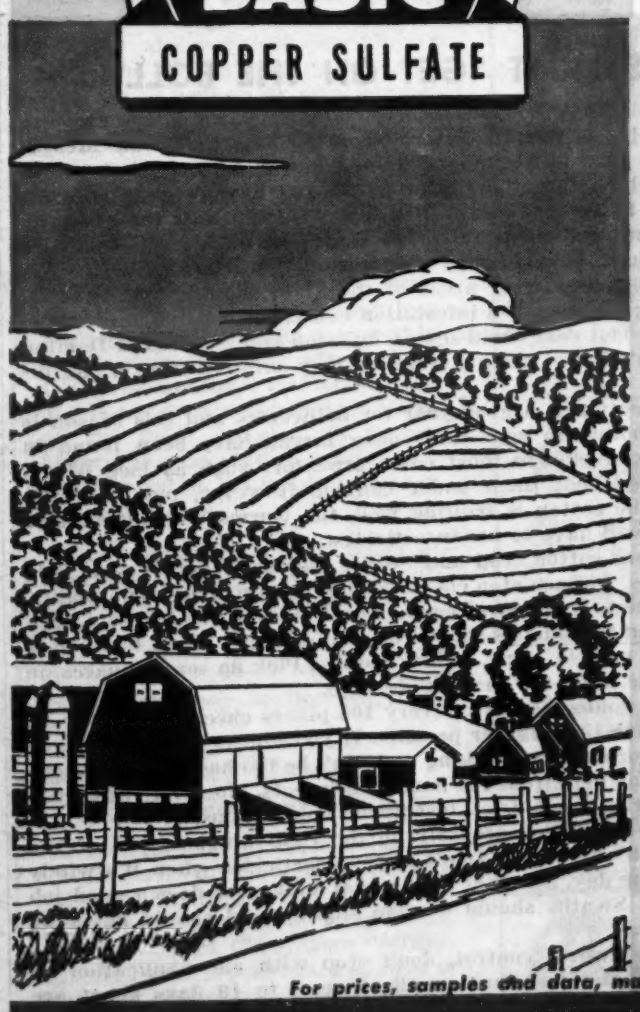

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INSECT, PLANT DISEASE NOTES

N. Carolina Cotton Crop Has Low Pest Population

RALEIGH, N.C.—Recent rains during the past 8 to 10 days have made for rapid growing conditions. Generally speaking, the crop prospect appears to be good at the present time. It is vulnerable at the moment, however, and can be severely damaged by the boll weevil and/or bollworm if any letup in checking fields and applications when needed is permitted.

In the southeast, weevil activity is high in Scotland, Robeson, Harnett and Sampson Counties. Some mid-Piedmont and central areas are showing high populations. (Union, Wilson, and Wayne Counties.) Upper Piedmont sections still have rather low populations, but nothing can be taken for granted. Fields must be watched carefully and treatments made at 3 to 5 day intervals as long as the populations show over 10% and until the main or expected crop of bolls is at least 18 to 20 days old.

Bollworms are not generally in threatening numbers in any county as of this date. (July 27) Only a few fields show any. With much late cotton, however, we must check our fields regularly for evidence of worms in squares, at the base of blossoms and in the young bolls or squares. If as many as 4 per 100 bolls are seen, a special treatment may be advisable.

Spider mites are present in many fields throughout the entire state, but few reports of severe damage have come in. In many fields their numbers may actually be as much helpful as harmful since the foliage may be heavy following recent rains.

Lygus Bugs Bother Arizona Growers

PHOENIX, ARIZ.—Lygus bugs are continuing to build up in Pinal county. The Magma and West Coolidge fields, previously dusted, are showing a quick reinfestation of Lygus. The counts in Pinal County show an average of 22 Lygus in Maricopa, 8 in Stanfield, 12 in West Coolidge, 8 in East Coolidge and Magma areas. A few leafhoppers and perforators are also showing up. Cotton bollworm infestation is about the same as last week. (July 27). USDA workers report that some control of bollworm has been applied in Pinal County. They also report an increase of cotton leaf perforators.

Spider mites are reported building up in Cochise County, and fleahoppers, stink bugs and bollworms are also showing up in a number of fields.

In Graham County, Lygus continue to be the most important insect with some bollworms showing up in places. Growers should watch their fields very closely for presence of many injurious insects and control them if necessary.

In Yuma County Lygus counts were very high in Yuma Valley. Many squares were being destroyed by nymphs and adults. Some bollworms and leaf perforators were also appearing. Lygus were building up in all parts of the county.

USDA workers report bollworms fairly general in all parts of Pima county.

Insect populations are high in most sections of Maricopa County and weather has complicated their control. Growers are finding that proper timing is more important than ever. Lygus and bollworms are causing the greatest concern. Counts are running as high as 40 to 50 per 100 sweeps. Good controls have been secured but re-infestations are rapid. It is also reported that in the Tolleson, Peoria and Chandler areas, large bollworms have been seen. Evidently the fields have not been watched too closely.

The cotton leaf perforator is also appearing in the western part of the county and control measures are being applied.

"We find many growers that are letting their insect counts, especially Lygus, get to 40 or 50 per 100 sweeps before controlling. You never get a 100% control and if you get even 95% control with counts of 50 you will still have some insects left. We recommend starting when 10 to 12 Lygus are present and the control can be kept to a minimum with very little injury to the squares and the cotton plants. Follow directions at all times and for further information contact your County Agent," was the advice of J. N. Roney, extension entomologist.

Grasshoppers Still Do Damage in Missouri

COLUMBIA, MO.—Weather during the past week (July 28) has brought us somewhat closer to grasshopper damage over much of the state. With the high temperatures, much wasteland and grassland vegetation is maturing, and if this continues, there will be more concentrating of 'hoppers in crops.

Temperatures for the past several days have been high enough to cause some difficulty in getting kills from aldrin and heptachlor. Such trouble may be expected anytime temperatures range in the upper 90's or above.

To minimize the effects of high temperatures as much as possible, apply the insecticide early in the morning or late in the evening. Hoppers will be feeding most actively at these times of day, and in addition, convection currents from the ground will be at a minimum.

Where it can be used safely, Dieldrin is the most successful hopper insecticide during periods of high temperatures. But the very qualities that make it desirable during hot weather also restrict the places where it can be used. Residues from dieldrin are quite long lasting; crops sprayed with it should not be grazed or harvested less than 30 days after spraying.

In some sections of the state, there may be some migratory movement of hoppers. Flights of both the little Mexican hopper, and the big yellow differential have been observed during the past couple of weeks. Consequently, you may have complaints to the effect that fields sprayed some time ago are now reinfested. There is nothing that can be done except to re-spray.

This has been one of the worst years in a long time for bagworm injury. Most ornamental cedars, as well as many other trees and shrubs have been infested. In addition, the infestation in wild cedars has been extremely heavy.—Stirling Kyd and George W. Thomas.

Tobacco and Corn Are Damaged by Insects

COLLEGE PARK, MD.—European corn borer has done rather heavy damage to some fields of early sweet corn in Carroll and Baltimore Counties. Borers are now in the pupal stage in that area. (July 27) On the Eastern Shore corn borer eggs have not increased in the last two weeks. Examinations of 5 fields in Queen Anne, Talbot and Dorchester Counties on July 24 showed 0, 0, 0, 1, and 3 egg masses per 25 stalks, that is, an average of 3.2 masses per 100 plants. Corn earworms were found in 20% of the ears in one Baltimore County field of early corn; most of the larvae had just hatched. Corn on the Shore now being gathered is relatively free, but it is time for an increase. Moths are on the wing.

Sap beetles are abundant in Carroll County and larvae are beginning to appear at the University farm at Fairland. The beetles are less abundant in Eastern Shore fields than they were two weeks ago, however corn with short husks has larvae in the ears.

Potato leafhopper damage has been light to moderate, damage often showing on alfalfa field borders. Young growth in Montgomery County has an average of 5 leafhoppers per sweep—a potentially injurious population; older injured fields, 30 to 40 per sweep.

Most soybeans are in fine condition with a minimum of insect damage. Dorchester County has some spots of damage from two-spotted mite; leaves lose color and turn brown. Mites can be found in small numbers on the borders of all fields, possibly more on lower leaves than upper. The problem follows low fertility and hot dry weather.

Tobacco hornworms may be found in spots, some growers are finding insecticides necessary. In Calvert County 2 to 8 eggs per 25 plants were found; indicating a second brood started. Aphids have had some build up due to cool showery weather, but nothing serious has been observed. A few flea beetles are present.—Theo. Bissell and W. C. Harding, Jr.

Boll Weevil Numbers Increase in Tennessee

KNOXVILLE, TENN.—(July 30) There was considerable increase in boll weevil infestations as the punctures are now showing up from the first generation of weevils. Scattered showers throughout the weevil infested area have made conditions ideal for build up. In areas that did not get rain, weevil populations are low. Infestations appear to be in direct proportion to the amount of rainfall received. The dry period we had took its toll on many grubs but rains since then make conditions very favorable on the mature grubs and pupae that are almost ready to emerge.

The average per cent of infestation for infested fields is 35% and it was 19% last week. The average for this time last year was 6%. It is very important at this time to check fields regularly in order to catch these first generation of weevils early. Control measures are being carried out throughout the infested area and good results have been obtained so far. Increases in weevil populations will continue as long as there is plenty of rainfall.

There are some increases in bollworm populations all over the area. Increases are expected to continue and fields should be observed to detect them early.

Flea hoppers are reported to be few in number, but on the increase. The same is true with plant bugs which are said to be increasing in some fields.—R. P. Mullett.

Corn Pests Threaten Infestation in Kansas

MANHATTAN, KANSAS—Non-economic infestations of spotted alfalfa aphids continue in alfalfa fields of Osborne, Mitchell, Cloud, Clay, and Riley counties. Counts average around 250 aphids (80% winged) per 25 sweeps.

Spotted alfalfa aphids numbering 5,000 per 25 sweeps were observed in some alfalfa fields near Hays, Ellis County. Honey dew was evident in the heavier infested fields.

Light to moderate infestations of corn leaf aphids were observed in fields of milo growing in Osborne and Mitchell counties. Counts ranged from 50 to over 1,500 aphids per whorl. Corn leaf aphids infesting milo fields in Marshall County have decreased in number when compared to counts made one week previously.

Heavy populations of corn rootworm adults have been reported causing damage to silks and tassels in some fields of corn in both Dickinson and Marshall counties. The southern species (D. undecimpunctata) and the western (D. virgifera) were dominant.

Heavy populations of alfalfa caterpillar were observed in alfalfa fields in Osborne County. Counts ranged from 4 to 12 per sweep and feeding

GROWERS MUST "GET ON THE BOLL"

STATE COLLEGE, NEW MEXICO—A warning issued to cotton growers in New Mexico by John J. Durkin, extension entomologist at New Mexico A&M College, offers a hard-hitting appraisal of what to do and what not to do about bollworms which threaten the crop. "If you haven't checked your cotton recently, you'd better get on the ball," Mr. Durkin tells the growers. "Bollworms will be causing damage to cotton from now until frost. Don't let the worms get more than their share of your cotton this year.

"Growers in all cotton-growing areas of the state shouldn't have to be reminded of the damage a bollworm infestation can cause. Cotton farmers in Roswell will remember last year's mid-season invasion and growers in Deming and Lordsburg shouldn't forget the heavy losses they suffered from a bad infestation last year.

"A good year for cotton is a good year for bollworms and this season is no exception. A few bollworm eggs and young larvae have been found in cotton for the past six weeks. In most cases predators such as lace wings, Orius, and bigeyed bugs kept them under control. However, now that the weather is right and the cotton is fruiting well, the worms will out-number their enemies and you will have to use insecticides.

"Start checking your cotton crop now! Walk diagonally across your field and make 20 or 25 stops. At each stop check the top one-third of 4 or 5 plants. Look for the small white to tan colored eggs on both sides of the leaves. Check the terminal growth and the squares for worms and damage. When the worms are very young, they're only ⅛" long, so look closely. Pick up some squares on the ground and examine them for chewing damage.

"If you find 5 to 6 young worms to every 100 plants checked, don't wait. Begin treating as soon as the weather permits. If you find eggs and damaged squares but no young worms keep checking and don't be too hasty with insecticides. You may be getting help from the beneficial insects. However, when you start finding young worms don't delay insecticide applications.

"Insecticides must be applied properly, in the right amount, and at the right time to do the job effectively. Don't apply insecticides when it's windy or during the heat of the day. See that your aerial applicator does a good job of dusting or spraying. Swaths should overlap slightly and should never be more than 45 feet wide.

"Once you start bollworm control, don't stop with one application. A minimum of two and sometimes three applications 7 to 10 days apart are needed to control the first bollworm infestation.

"Keep checking your cotton and apply insecticides when you find insects. Don't spray or dust your cotton just because your neighbor does. He may have to, when you don't. If in doubt, call your county agent for help."

mage was evident on the already outh stunted plants. Heavy popu- tions were also reported present in ooks County.

Threatening to severe grasshop- er populations were found in lo- alized areas in Osborne, Mtichell, loud, Clay, Riley, and Dickinson ounties. Counts ranged to highs of ver 20 adults per square yard in ome alfalfa fields and along the argins of some corn fields. A new atch of second generation lesser igratory grasshoppers (Melano- lus mexicanus) was observed in everal alfalfa fields in Osborne ounty.

Light to threatening populations of ister beetles were observed in some the alfalfa fields that were survey- in Osborne and Mitchell counties. ounts ranged to highs of 12 per weep in several fields.

Light infestations of Indian-meal oth adults were observed at one rain storage site in Osborne County. ix of seven bins examined were in- ested.

Dermestids were observed flying round storage bins at three sites of rain storage in Osborne County. Winged adults were observed in sev- ral bins that were examined and rvae and adults taken for determi- ation. No dermestid beetles were ound at the grain storage sites ex- mined in Dickinson and McPherson ounties.—Dave Matthew.

torms Damage Crops, ndiana Report Says

VINCENNES, IND.—Temperatures round Vincennes began rising on uly 26 and reached 92 degrees F. wo "hot, muggy days" followed and emperatures reached 96 degrees. hen about 4:30 p.m. July 28, a severe ind and hail storm struck most of Knox County, Indiana. This wide pread storm caused severe damage o both apples and peaches growing n the area. Near Oaktown, hail broke he skin of peaches and left numerous ruised spots on apples. In the Vin- ennes area, hail was accompanied by igh winds. In some of the orchards heavy drop of apples and peaches ccurred along with bruising and imited cutting of the fruit on the rees.

At the present time a few adult codling moths are coming to bait traps from the tail end of second brood larval emergence. Most of the larvae that left the apples prior to July 16 have emerged as adults. New entries were hard to find in most commercial orchards during the past week. Cover sprays that were applied in this area prior to July 28 were badly depleted by the driving rain on July 28 and should be renewed in order to assure pro- tection for late second and early third brood worms.

The wind and hail on July 28 caused severe damage to corn in many fields in this area. In some instances the leaves are severely torn or shred- ded while in others the stalks are broken and flattened on the ground.

Both corn earworm and European corn borer are causing extensive dam- age, more so than in the average year. Corn root worm adults were found to be very numerous and feeding on the silks of corn in one field (and proba- bly others) on July 21.—D. W. Hamil- ton.

Alfalfa Aphids Tend Toward Increased Numbers

STATE COLLEGE, N.MEX.—Cot- ton bollworms are causing light to moderate damage in cotton fields in Dona Ana, Lea, Eddy and Chaves Counties. In many fields there are large numbers of predators working on eggs and young larvae. A few growers are treating for bollworms.

Pink bollworms are showing up in cotton in southern Dona Ana County much earlier than usual. A recent re- port by the Pink Bollworm Control Project showed that infested blooms were found in seven fields. Most fields had very light infestations while one field had approximately 10 per cent of the blooms infested.

Cabbage looper infestations are medium to heavy in cotton fields in Carlsbad. Growers report difficulty in controlling them.

Cowpea aphids are heavy in spots in one field in Dona Ana County and are present in spotty infestations in Lea and Sierra counties.

Lygus bugs are general but light in cotton in Dona Ana and Eddy counties.

Spotted alfalfa aphid populations keep fluctuating. However, a sud- den increase has been noted the past two weeks in most fields. Mod- erate to severe damage is spotty over most of the southern half of the state. In Torrance County al- falfa aphids are present in light to medium infestations in all fields but beneficials seem to be keeping them under control. De Baca, Va- lencia and Sandoval counties report heavy build-ups in most fields. Last year at this time spotted alfalfa aphids suddenly disappeared. Most growers felt the disappearance was correlated with the July rains. Most of the state received rains, this week but populations haven't de- creased as yet. (July 21)

Grasshopper infestations are re- ported on crop land in Socorro, Santa Fe, Rio Arriba, Toas, Mora, San Miguel and Valencia counties. Domi- nant species are Melanoplus bivit- tatus, M. femur-rubrun, M. differenti- alus and M. mexicanus.

Range land grasshopper infestations are being sprayed in Lea, Union, Harding, Colfax and Quay counties. To date, 231,507 acres have been sprayed. Approximately 100,000 acres in Lincoln County are to be sprayed in the near future. A new outbreak is reported on approximately 250,000 acres of range land in southern Col- fax County. This acreage did not show up in last year's adult survey.—John J. Durkin.

Delaware Corn Borers Appear in Force

NEWARK, DEL.—The corn borer, which cost each Sussex county corn grower an average of $111 in damages last year and wreaked only slightly less havoc on the crop elsewhere in the state, is well on its way this sea- son to topping last year's record dam- age total, says Dr. Louis Stearns, head of the entomology department at the University of Delaware.

Field surveyors say that infesta- tion is more severe this season than it was at the same time last year. At the end of the crop season last year, about 67% of the corn plants in the state had been attacked by the borer and there was an average of 241 borers per hundred plants in all the fields sampled. In Sussex county, the infestation reached the record total of 323 borers for every 100 corn plants.

The borer also has made heavy at- tacks this season on the state's 9500- acre potato crop, reports Dr. Stearns. He warns that all corn will suffer from now until harvest from the com- bined attack of borers, earworms, sap beetles, Japanese beetles and fall armyworms.

Borer Activity Slowed By Illinois Weather

URBANA, ILL.—Cool weather has slowed corn borer development to a walk and has resulted in abnormally high borer mortality in some areas, notably parts of Champaign, Vermil- ion, and Iroquois counties. Pupation is now well under way in central and north-central Illinois counties. The degree of pupation varies widely from county to county, ranging from 10 to 80% in some early sweet corn and from 0 to 50% in field corn.

Pupation seems to be low in areas that have had repeated heavy rains in the last three weeks and in the ex- treme north. A few moths have emerged in the central section, but emergence will not reach a peak for 10 days to two weeks. It is very un- likely that any field corn will need treatment for second-generation borers before the week of August 5, and perhaps it will be even later if cool weather prevails. However, can- ners should begin looking for eggs as soon as any moth activity is detected —possibly this week—and be pre- pared to start spraying when the first eggs hatch.

It is too early to say how large the second-generation brood will be, but many unsprayed fields are averaging from one or two to six or more borers per plant. If the nor- mal percentage pupate and condi- tions are favorable, second-genera- tion populations could therefore equal or exceed those of last year.

Moderate to severe grasshopper in- festations have been reported from western and northern Illinois. To date damage has been slight because the hoppers are small and the vegetation is luxuriant. But a few warm, dry days could change the picture quickly. In general, the small grasshoppers are still concentrated in fencerows, ditch banks, and roadsides, where they can be controlled easily.—Geo. C. Decker.

Iowa Corn Growers Warned Against Pests

AMES, IOWA—Corn canners, seed corn and popcorn producers were warned by Iowa State College ento- mologists to check fields regularly and be ready to treat for European corn borer infestations. At the Ank- eny laboratories, 10 second-brood egg masses per 100 plants were counted and at Boone (July 26), the first sec- ond-brood egg masses were found.

Two-spotted mites are appearing on corn.

Grasshoppers continue to be a

(Continued on page 17)

Naugatuck Agricultural Chemicals

product	application	advantages
Aramite miticide	controls mites on citrus and deciduous fruits, cotton, other row crops, ornamentals and vine crops. Also controls poultry mites.	non-hazardous, low cost per acre, highly compatible, harmless to natural predators.
Spergon® seed protectant	controls soil fungi and storage insects (with DDT) on most crop and vegetable seeds.	effective at economical dosages, safe on seed, easy to use, compatible with most other chemicals including legume inoculants, low cost.
Phygon®-XL fungicide	controls fungus diseases on fruit trees and row crops.	extremely low cost per acre, easy to apply, compatible, harmless to pollen and bees.
MH growth retardant and herbicide	inhibits grass growth: controls wild onions and quack grass; prevents tobacco suckering. Preharvest application prevents destructive storage sprouting of edible onions and potatoes.	extremely safe on plants; easy to apply: in wild onion control, one spray lasts up to 3 years.
Alanap® pre-emergence weed killer	pre-emergence weed-control for vine, row crops; asparagus and nursery stock. Available commercially for use on vine crops.	safe on recommended crops, relatively non-toxic, easy to apply, favorably priced.
Duraset*-20W flower and fruit-setting compound	a fruit-setting chemical for lima beans, legumes, peppers and various tree fruits.	low dosage per acre, easily applied as a foliage spray.

*U. S. PAT. 2,556,665

SEE—Naugatuck Chemical Division, United States Rubber Company, at work on NBC's "Color Spread" TV spectacular, Sunday, March 25, 7:30 PM, EST.

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Naugatuck Chemical Division

Naugatuck, Connecticut

Expert Reports New England Soil Improved Despite Long, Heavy Use for Two Centuries

Editor's Note

The author of this article is Dr. C. L. W. Swanson, chief soil scientist at the Connecticut Agricultural Experiment Station, New Haven. His remarks at the recent 123rd quarterly meeting of the New England Council at Poland Spring, Maine, were entitled "Soil—An Expandable New England Resource."

In the days when young men were advised to "Go west and grow up with the country," a vast frontier of exploitable resources was available and strongly beckoned hardy and adventurous pioneers to seek and find.

Today, that type of frontier is gone, and there are few opportunities to move on to new lands when the soil fertility in a given area begins to slacken. Our soils are not as fertile as they once were, and as a result, fertilizers are being used in areas where they were unknown only a short time ago.

The western corn belt is a good example. When the speaker was a boy on a northwestern Iowa farm, no one there ever thought of using fertilizer. They didn't think they needed any. The soils had been farmed for only about 75 years and were still in fairly good shape, fertility-wise. Furthermore, you couldn't have bought fertilizer in the local store, even if you had wanted to.

Fertilizers in those days were synonymous with "manure." Few persons knew that the pungent odor coming from a manure pile was caused by a gas that some day would be produced commercially and piped into the soil. But today it is a common sight in the corn and cotton belts, to see anhydrous ammonia being applied to the soil as a gas through pipes attached to the cultivator shovel.

The fact that our concepts on soil fertility have changed is helpful to New England's agriculture. We used to depend first on the fertility of the soil, and second, on commercial fertilizers as a last resort for improving yields. New England's soils are naturally infertile, hence, the great agricultural movement westward about 1870. Now forward-looking farmers are using fertilizers every year to boost yields supplementing whatever natural fertility there may be in their soils.

In the last few years some real changes have been made in soil fertility and management practices. Soils don't have to be naturally fertile to produce, as was once thought. Thus is squashed the idea that farming would be more advantageous in the West than elsewhere, because of better fertility.

Along with our new concepts of soil fertility and management, we need to redefine what we mean by "marginal land." Marginal land in its present connotation refers to the natural fertility in the soil. If it doesn't have much natural fertility it is marginal land.

Now, whether land is marginal or not, depends more on physical rather than chemical factors. Such physical factors are stoniness, thin profile, erosion, droughtiness, slope of the land and similar factors. Their physical factors are often limiting to the point that supplying the fertility in chemical form in conjunction with proper soil management will still not give fertile, productive soils.

Without fertilizers, many soils in New England, for example, would be in the marginal land class. The original top soil produced under the prevalent forest is only 2 to 4 inches thick. Not only is the top soil thin, but it is also naturally infertile. Organic acids and high rainfall have leached our soils of plant nutrients such as calcium, magnesium, and potassium. Actually, the upper part of the subsoil has been incorporated with the top soil to make a "man made" top soil.

In the corn belt, however, the soils have deep top soils and "built-in" natural fertility. In New England, the fertility is "built into" the soil. Many of the corn belt soils now, however, are having fertility "built into" them by the use of fertilizers.

Actually, since fertilizers have been used longer in New England than in other sections of the country, studies show that our soils in many cases are more productive now than they ever were. Some of the plant nutrients have been added in such large amounts that they have accumulated in the soil.

High income per acre crops such as tobacco, vegetables and grass are grown in New England, and if one uses the 1950 census data as a base, the intensive nature of northeastern agriculture is evident. When the states are ranked in order of average gross income per acre from farming, the first five and the tenth are in the Northeast. The top states are New Jersey leading with $161 per acre, then Delaware, Connecticut, Massachusetts, and Rhode Island fifth with $84. California and Iowa are next being tied with $58 per acre. Pennsylvania ranks tenth at $51.

According to the Federal Reserve Bank of Boston, in 1955 New England farmers fared better than other farmers in the nation. Cash receipts were up eight per cent over 1954. This compares with a 2.6% decline for the United States as a whole.

This high productive capacity of New England's soils certainly is not related to their natural fertility. Several factors to account for this are evident. Productive scientific agriculture has to be practiced. In order to produce, fertilizers are used liberally. As much as 200 lb. of nitrogen, 120 lb. of phosphoric acid and 200 lb. potash an acre are applied annually to shade-grown tobacco in the Connecticut Valley. On a fertilizer basis, this makes about 3,500 lb.

Relative abundance of water is another factor favoring New England. Rainfall averages from 35 to 40 inches in northern New England to 45 to 50 inches a year in southern New England.

In only a few areas have the water tables been lowered by pumping such as in irrigated areas in the Far West. Since sprinkler-type irrigation is generally used for supplemental purposes, land does not need to be leveled as in the Far West.

Evaporation is much less in New England being about 30 inches during May to October compared with as high as 65 inches in the Plains States. These high evaporation rates in the irrigated areas mean applying more water which adds to the cost of crop raising.

In New England, no salts accumulate in soils as in the Far West. Rainfall or irrigation waters are not impeded in their downward movement by soil swelling, closing the soil pores. Generally the soils are more porous.

With lowered soil organic matter incident to continued cultivation, soil structure has probably deteriorated more in the corn belt. The majority of soils in the breadbasket area are fine textured, thereby being more favorable for development of poor structure. Generally little organic matter is returned to the soils and they become poor physically. Although we have structure problems in New England, on our generally sandy-textured soils they are not as acute as on the silty, clayey soils in the Midwest.

The fact that our soils are sandy textured and low in clay has other advantages. How many of you have driven down a dirt road in most any other section of the country and virtually got lost in the dust, especially if you were following another car?

With most of our soils having less than 10% clay, it means there isn't much fine material to fly around. Also, our research shows that we don't have the sticky kind of clay.

You may say the cities are using up our land. They are. Good agricultural land is being used for industrial and home sites. Land adjacent just as good for either use is oftentimes left idle. Just because our good agricultural land is being gobbled up by industry and by home owners is no reason to say that it should continue. If our pioneers had had that line of thinking the West would never have been settled.

According to a study made by the Soil Conservation Service, 15,000 acres of land suitable for cultivation is converted to non-agricultural uses in New England each year. This is over 23 square miles a year. This figure does not represent the total conversion, but only the land considered suitable for cultivation.

Why should we be concerned about this? As cultivatable land shifts to other uses, and as food demands increase, food production shifts more and more to the less desirable land for crop growing. This increases the cost of production and, hence, the cost of food. Increased food costs ultimately mean a lower standard of living with less money left to buy so-called luxuries produced by industry. In our country, food takes about one-fourth of our spendable income. In many foreign countries, food takes 30 to 80% and more of their spendable income.

In taking the long-time look, it is obvious we need to do something about this urban sprawl. Just as something was done about erosion control after a long period of inactivity, something needs to be done about the disappearance of our agricultural land.

We need urban leaders who can see that land should be used according to its capabilities. Our idea of capabilities should be expanded to include not only agricultural but industrial and other uses.

Other things being equal agricultural land probably should be given priority over other uses. Buildings can be put most anywhere but once land is ruined by buildings, for practical purposes it is ruined forever for agriculture.

We need to think more about our need for food production areas for filling the mouths of our increased population in years to come. At the current degree of farming efficiency, the needs of the 1975 population in this country will require, according to United States Department of Agriculture estimates, about 530 million acres of cropland. This is about 4 acres for every 3 acres actually available today. But we are already short by nearly 100 million acres of meeting the needs of the 1975 human population.

How are we going to meet these food needs? By producing more per acre and using land which we once thought was too poor in fertility to grow productive crops. This may mean using more land for producing crops in New England.

Since the productive capacity of New England's soils is so high, one wonders if it might not be wise to spend from $25 to $200 for clearing and improving land in New England.

Once the land is cleared, there are no further costs for items like irrigation water, for rainfall is usually adequate. Research and farm practice have shown that in New England supplemental irrigation increases yields in years with short dry spells. Since water is generally more available than in some sections of the country this has not been a deterrent to increased irrigation.

With our population increasing at the rate of 4 persons every minute and with New England in the most densely populated area in the United States, some thought might be given to the possibility of using New England's soils more as one means of increasing our food supply. Nearness to market is another reason for using New England soils to their maximum capacity.

It is estimated that from 10 to 20% more of the land in New England could be put into agricultural production. In fact, during the early years of our country, more land was producing crops than now. In Connecticut, for example, land clearing had reduced our forests to about 30% by 1830. Since that time abandonment of farms and pastures has resulted in bringing back Connecticut's forested lands to about 60% of the State area.

The acreage which could be cleared and improved would vary with the kind of soils present in the area in question. Modern power equipment now makes it possible to clear fields of stones and boulders never before possible. Many areas can now be drained and put into production as the result of improved land drainage techniques and improved knowledge of the management of the soils after they have been drained. Trees have always been cut and they present no problem.

Just any kind of land should not be put into production. Some soils are too stony or rocky, some are too sandy and droughty, some would be impractical to drain because of the tightness and impervious nature of their subsoils, some would be too steep and should be kept in trees for controlling erosion.

Even in excluding all these soils having inhibiting factors for economical crop production, many soils which are comparable to those now producing crops are now in trees or idle land. Modern soil survey techniques bring out desirable relationships of soils for crop production. Also information from soil surveys shows what soils are adapted to the production of given kinds of crops.

Clearing and draining of land for use in increasing the production of crop are, in a sense, an exploitation of our soil resources. But this exploitation can be a well-managed one so that every soil will be used to its utmost in producing crops and at the same time be improved in its fertility and productivity. Erosion will be at a minimum. Fertilizers, pesticides, crop rotation, and other management practices will be employed for improved yields. The productivity of our soils will be increased and their fertility maintained or increased.

There are several reasons then why farming activity should increase in New England. We have productive, salt-free soils, abundant rainfall, source of water for irrigation, soils in good tilth and nearness to market. Possibly the major obstacles are the use of land for other than agricultural purposes and the competition for labor with industry.

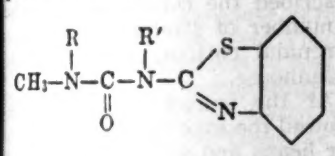
With all these advantages and with so few disadvantages should we not encourage more agriculture in New England?

The thing is New England probably isn't any better place to farm than any other place, but what does need pointing out is that there are real potentialities for farming in New England. Whether we need this land now or later, we should treat it now so that it can be used in the future.

Industry Patents and Trademarks

2,756,134. Soil Stabilization. Patent ued July 24, 1956, to Leo J. Novak, yton, Ohio, assignor to The Com-nwealth Engineering Co., Dayton. e method of conditioning soil by nthesizing therein native, unhy-olyzed dextran which comprises ap-ying to the soil a dry, particulate ixture of cane sugar and a dextran-nthesizing agent selected from the oup consisting of dextran-synthe-ing bacteria of the species Leuco-stoc and the enzyme produced by id bacteria so that, in the presence moisture in the soil, the native, un-drolyzed dextran is produced from e sugar by the action of the dex-an-synthesizing agent thereon.

2,756,135. 1-Methyl-3-(2-Benzothia-lyl)-ureas and Their Uses as Herbi-des. Patent issued July 24 to Nor-an E. Searle, Wilmington, Del., as-gnor to E. I. duPont de Nemours & ., Wilmington. A method for the ntrol of weeds which comprises ap-ying to a locus to be protected, a methyl-3-(2-benzothiazolyl) urea presented by the formula



here R is selected from the group nsisting of hydrogen and a mono-lent aliphatic hydrocarbon radical less than 5 carbon atoms, and R′ selected from the group consisting hydrogen and methyl.

2,756,233. Fungicides and Method Making Same. Patent issued July , 1956, to Stanley B. Elliot, Walton lls, and Albright M. Nicholson, eveland, Ohio, assignors to Ferro emical Corp., Bedford, Ohio. The ethod of producing a composition matter, which consists of reacting temperatures between 200° F. and e lowest decomposition tempera-re of the reactants, hydroxyquino-ne, with at least one water insoluble etal organic acid soap, said metal ap selected from the group con-sting of the metal water insoluble aps of stearic palmitic, lauric, 2-thyl-hexoic, linoleic, linolenic, oleic cinoleic, naphthenic, tall oil, rosin l, rosin and abietic acids and an lkyl phenol in which the alkyl group as at least 8 and not more than 15 arbon atoms.

2,756,250. Alkyl Amido Pyro-Phos-horus Insecticides. Patent issued uly 24, to Harry W. Coover, Jr., Kingsport, Tenn., assignor to East-an Kodak Co., Rochester, N.Y. The rocess of contacting at elevated emperatures alkylamidophosphates ith lower fatty acid anhydrides to orm alkyl-substituted amido pyro-hosphates.

Trademarks

The following trademarks were published n the Official Gazette of the U.S. Patent ffice in compliance with Section 12 (a) f the Trademark Act of 1946. Notice of pposition under Section 13 may be filed within 30 days of publication in the Gazette. ee Rules 20.1 to 20.5.) As provided by ection 31 of the act, a fee of $25 must ccompany each notice of opposition.

The following trademarks appeared in the fficial Gazette in its issue of July 24, 1956:

Bird Guardian, in capital letters, or insecticides. Filed Sept. 1, 1955, y Guardian Industries, Inc., New ork. First use Aug. 15, 1955.

K-9 Guardian, in capitals, written n two lines, for insecticides. Filed ept. 1, 1955, by Guardian Industries, nc., New York. First use, May 19, 955.

Qual, in capital letters, for sulfuric id. Filed Sept. 23, 1955, by Scholle orthlake Corp., Northlake, Ill. First se June 4, 1954.

N-Dure, in capital letters, for nitro-en-containing solution suitable for e in the manufacture of fertilizer. Filed Feb. 17, 1956, by Allied Chemical & Dye Corp., New York. First use Feb. 6, 1956.

Cornhusker, in hand-lettered capital letters in outline form, for dehydrated cow manure. Filed Feb. 20, 1956, by North Platte Fertilizer Co., North Platte, Neb. First use, Jan. 16, 1956.

Oregon Tests Show Chemicals Can Cut Weed Costs in Corn

CORVALLIS, ORE.—Chemical weed control in sweet corn and pole bean fields may soon cut about three-quarters off the cost of hand hoeing which runs at about $20 an acre, according to results of preliminary tests recently conducted at Oregon State College. Many growers in the state have already solved broadleaf weed problems with dinitro amine chemical products at an estimated savings of $200,000 in labor costs last year on some 25,000 acres of beans and corn, the college reports.

Grassy weeds, resistant to dinitro amine, have remained to plague growers with the high-cost hoe treatment on many farms. Roland Laning, OSC horticulturist, now reports control of both broadleaf and grassy weeds with one spray mixture of dinitro amine and a new chloro-acetamide chemical not yet on the market.

Mr. Laning applied the spray mixture about a month ago, just before the corn and bean plants emerged. While it is still too early to judge complete results, the scientist says test plots have remained virtually free of weeds with no apparent damage to the crops.

If the treatment receives final approval, Mr. Laning estimates that dual-control of both weed species would cost little if any more than present control of broadleaf weeds alone. The standard rate of dinitro amine was cut in half and mixed with an equal amount of the chloro-acetamide for the dual-control treatment.

Two other materials now on the market—amino-triazol and benzoic acid—also show promise as pre-emergence sprays to control both weed species in corn and beans. Use of these materials and the new chloro-acetamide on beans and corn must first be cleared with the food and drug administration that establishes tolerances, or allowable application rates, for specific sprays and crops.

Mr. Laning says FDA clearance of the materials at recommended spray rates should pose no serious problem. He anticipates extensive field tests by growers next year.

Michigan Chemical Shows Gains for First Half of Year in Sales, Profits

ST. LOUIS, MICH.—Michigan Chemical Corp. figures for the six months ended June 30, 1956 showed net income of $0.45 a share of common stock as compared to a profit of $0.26 a share in the first six months of 1955, an improvement of 73%.

Earnings were $244,923 in 1956 against a profit of $141,238 in the comparable period in 1955. Because of depletion allowances, no taxes were required in either year.

Sales for the period were $3,588,997 in the 1956 period and $3,311,911 in the 1955 six months, a gain of 8%, the company reports.

The second quarter showed an improvement in net earnings of $192,560 against $111,388 in 1955, equal to $0.36 a share for 1956 as compared to $0.20 a share for the 1955 second quarter. Sales were $2,099,715 in the 1956 second quarter against $1,723,282 in the similar period of 1955.

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POLYBOR-2...Highly soluble. Contains 20.5% Boron or 66% B_2O_3. Applies as a spray or dust; compatible with insecticides and fungicides currently in use and may be applied in the same solutions. *Bulletin PF-4.*

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WILD GRASS

(Continued from page 1)

been unable to make a direct cross between these two species.

E. R. Sears, plant breeder with the Agricultural Research Service of USDA arrived at the desired objective after crossing and re-crossing different grasses and wheat through five intricate steps. Treatments to change the arrangements of chromosomes and genes were given by X-ray and chemical means, with varied complicated results. Although some of the resultant wheat carried resistance to rust diseases, it also inherited undesirable characteristics which made it unsuitable.

At last, of the 6,091 offspring produced following X-raying procedures, at least seventeen had retained the rust resistance but appeared to have only part of the grass chromosome carrying resistance. One plant had so few of the undesirable grass features that it had apparently picked up only a very small section from the middle of the grass chromosome —the gene for rust resistance and little else. This one had near immunity to all 22 cases of leaf rust with which it was tested and no other evident character from the grass.

Weed Control Meeting Held on Florida Campus

GAINESVILLE, FLA.—A two-day session on weed control was held at the University of Florida July 26-27. Taking part in the two-day program were research personnel from the Florida Agricultural Experiment Station.

This was the second annual weed control meeting of this nature, with discussions covering the control of weeds in pastures, peanuts, peppers, soybeans, strawberries, vegetables, watermelons, nurseries and other crops.

UTAH CROPS

SALT LAKE CITY — A mid-year forecast of Utah crops reveals 1956 production still above 1955 harvest but below the 10-year average annual crop. Increases are forecast in harvests of wheat, corn, oats, rye, sugar beets, hay, while harvest of barley is somewhat behind last year. Present forecast of all wheat is 7,246,000 bu., about 3% above last year. Barley was estimated at 6,522,000 bu., about 3% below last year.

Fertilizer Safety Group Announces October Program

CHICAGO, ILL. — A preliminary schedule of the October 22-23 program of the Fertilizer Section of the National Safety Council has been announced by the group. Headquarters will be at the La Salle Hotel.

Curtis A. Cox, assistant manager of the manufacturing department, Virginia-Carolina Chemical Corp., Richmond, Va., chairman of the national safety section, will preside at the session of Monday, Oct. 22. He will welcome the group.

William N. Watmough, Jr., vice president, Davison Chemical Co., Division of W. R. Grace & Co., Baltimore, will speak on, "Safety is Top Management's Concern." Other speakers and their topics will include: "The Safety Director in a Multiple Unit Organization," J. Lauren Shopen, safety director, Consumer Co-op Association, Kansas City, Mo., and "The Safety Committee in the Plant," by C. S. Griffith, superintendent, Virginia-Carolina Chemical Co., Cincinnati, Ohio.

The sessions of Tuesday, Oct. 23, will include a luncheon at the La Salle, with a program. The subject, "Safety Program for the Average Plant", will be discussed by H. S. Baucom, safety director, North Carolina Industrial Commission, Raleigh.

The afternoon program is scheduled as follows: "Florida Cooperates —Not Regulates Work with Your State Department," by C. E. Hooks, Jr., Florida Industrial Commission, Tallahassee, Fla.; "How Electrical Accidents Occur and How They Can Be Prevented," by Charles J. DeWitt, assistant division manager, Loss Prevention Department, Liberty Mutual Insurance Co., Atlanta, Ga., and "How to Conduct a Safety Committee Meeting," by Glen F. Griffen, director of industrial training, industrial department, National Safety Council, Chicago, Ill.

TVA ADJUSTS COSTS

KNOXVILLE, TENN. — Tennessee Valley Authority has announced an adjustment on its ammonium nitrate delivered costs to provide more uniform price incentives to dealers and farmers, the TVA says. Some 72 distributors who have about 4,000 retail outlets are cooperating with land-grant colleges in 35 states toward the TVA objectives, the Authority states.

ILLINOIS MEETING

(Continued from page 1)

happen," he warned. "It requires soil tests, feeding plant nutrients they call for, of course," he said. "But it takes more than fertilizers. It takes 20 to 21 inches of water, good tilth, and proper stands," he added.

Mr. Mumm said his company uses a chisel plow for seedbed preparation. "You've got to have a deeper seedbed for those high yields," he contended. Fall plowing with the chisel plow also leaves the ground rough so it will trap snow and moisture.

Although his firm raises corn on land two or three times in a row, they also have a good legume program, the speaker said. He added, however, that you can "buy nitrogen cheaper than you can grow it."

The ideal, according to Mr. Mumm, is to have the soil condition so good, the supply of plant food so abundant, that you keep a stream of plant food moving up the stem as long as the plant can use it.

Dr. Werner L. Nelson, midwest representative for the American Potash Institute, reported on many studies which have indicated that, for most crops, the various potassium carriers are essentially equal from the standpoint of crop response and yields.

On deficient soils, Dr. Nelson said, potassium hastens the maturity of corn. On soils of medium to high fertility, there is little effect. Band placement, he added, is superior to boot placement of row fertilizers. Where large amounts of potassium are required, however, it may be necessary to use a combination of row and broadcast application.

Dr. Nelson pointed out that research is underway in a number of states to obtain more information on the behavior of potassium in soils and plants. It should be kept in mind, he said, that use of potassium — as well as nitrogen, phosphorus, and lime—is far below that needed for maximum profit.

L. T. Kurtz, professor of soil fertility at the agronomy department of the University of Illinois College of Agriculture, reported on work done at the College on winter application of nitrogen. Preliminary results show good results on heavy soils, while on the more permeable soils there seems to be little difference between fall and spring application on wheat and corn.

SOIL BANK

(Continued from page 1)

in the USDA in-kind payment value.

If for example a farmer had received a soil bank certificate calling for a cash payment of $100, he would have at once a payment of in kind value of $105, but he could not obtain payment in kind for more than two thirds of the total amount of his payment in kind measure of value.

This means that a soil bank certificate worth $105 in kind would give to the farmer on presentation to CCC, $70 worth of CCC commodities—corn-wheat-rice or tobacco and for the balance he would obtain $35 in cash.

The USDA policy is to hold down the amount of in kind commodities so that they will not flow over into the free market and depress prices. The present USDA policy is to stabilize and maintain major crop prices within the recent market and the ceiling which they have unofficially established as the statutory formula price ceiling for the crop at 105% of the price support level plus carrying charges.

The new soil bank act which is merely an amending provision to the farm act of 1949 permits USDA to sell at its bin sites corn or wheat at the market price even if that price in the county where stored is less than the statutory re-sale formula of 105% of the price support level.

These matters should be known to all dealers in fertilizer and pesticidal chemicals as a measure of the buying power of the farmers this year and next.

For the 1956 season the soil bank is money in the bank for doing nothing, for the Corn Belt and Wheat Belt farmers. It is money that could be spent before the chemical industry salesmen know that it is available. It is observed here that the fertilizer industry men may make some fall hay if they push out to book business now on the basis of that $112 million in federal checks which will flow out into the Corn Belt this year prior to election.

It should be observed that the industry and trade should not have sleepless nights because of the timing of the federal check delivery for this year's soil bank. The important thing is to note or learn from county agents where the checks are going.

The destination of those checks make customers for fertilizer either this fall or next spring.

Those checks may be parlayed into farmer profits to the smart dealer who works up scientific data on fertilizer problems in his community.

St Regis Increases Stock Dividend

NEW YORK—Directors of St. Regis Paper Co. have increased the dividend on the common stock of the company with a declaration of a dividend of 50¢ a share, payable Sept. 1, 1956, to stockholders of record July 28. This compares with 45¢ a share paid quarterly since Dec. 1, 1954, and marks the seventh consecutive year in which the dividend on the common stock has been raised.

Sales and earnings of the company during the first six months of 1956 again reached new high figures, due partly to increased tonnage production in the paper mills, and partly to including operations of companies which were acquired during 1955 and 1956.

Net income for the first six months of 1956, after provision for taxes, amounted to $12,303,483, equal, after deduction of preferred dividends, to $1.73 a share on 6,946,722 shares of common stock outstanding June 30, 1956. This compared with $8,713,[illegible] in the first half of 1955, which [illegible] equal to $1.52 a share on the 5,55[illegible] 529 shares of common stock outsta[illegible] ing June 30, 1955.

Net sales for the first six months [illegible] 1956 amounted to $167,641,936, compared with $112,474,642 in [illegible] first six months of 1955, represent[illegible] an increase of 49%.

Mississippi Holds Agronomy Field Day

STATE COLLEGE, MISS. — agronomy field day held Aug. 1 [illegible] fered the public an opportunity [illegible] inspect various experimental p[illegible] jects of the Central Experiment S[illegible] tion's agronomy department, acco[illegible] ing to Dr. Clay Lyle, dean and d[illegible] ector of the Agricultural Division [illegible] the college.

It was the first such field day e[illegible] scheduled at State College, Dr. [illegible] Dale Hoover, head of the agrono[illegible] department, said.

The day's tour included first a st[illegible] at the cotton varieties test pl[illegible] south of the campus. J. F. O'Kel[illegible] Experiment Station agronomist a[illegible] cotton breeder, described the cott[illegible] varieties tests now under way a[illegible] described the cotton nursery, whe[illegible] a number of strains, including so[illegible] perennial cottons, are grown in [illegible] greenhouse.

At the second stop, Mr. O'Ke[illegible] showed the experimental plots of c[illegible] tor beans and sesame, which are [illegible] ing considered as new crops for M[illegible] sissippi.

At the third stop, Howard V. Jo[illegible] dan, USDA soil scientist, pointed [illegible] experimental plots of corn. On t[illegible] unfertilized plot, the average yield [illegible] corn during the past nine years h[illegible] been 31 bu. an acre, whereas t[illegible] average yield on a similar plot wi[illegible] recommended spacing and fertiliz[illegible] tion has been 99 bu. an acre.

At the fourth stop, Mr. Jord[illegible] showed an irrigated plot of co[illegible] which shows good results from ir[illegible] gation. "With irrigation the farm[illegible] can be reasonably sure of a go[illegible] corn crop each year," Mr. Jord[illegible] said.

Use of Maleic Hydrazide For Cranberry Bog Weeds Found to Be Effective

MADISON, WIS. — The costs [illegible] controlling weeds in cranberry bo[illegible] may be reduced 90% with chemica[illegible] previously used only for sprayi[illegible] other crops, Dr. Malcolm N. Dana [illegible] the University of Wisconsin believ[illegible]

Dr. Dana will show the results [illegible] research into this problem Aug. 17 [illegible] the summer meeting of the Wiscon[illegible] State Cranberry Growers' Assn.

Current weed control methods c[illegible] cranberry growers upwards of $1[illegible] an acre a year, representing abo[illegible] 50% of their production costs. Da[illegible] believes the spraying costs can be c[illegible] to about $10 an acre, using mal[illegible] hydrazide (MH-40).

Dr. Dana recently took about 1[illegible] growers to see research plots he h[illegible] been tending since 1953 near Wisco[illegible] sin Rapids. Three chemicals—ami[illegible] (2,4-D), amino triazole and Dalap[illegible] —were used. All were effecti[illegible] against grasses and sledges (wi[illegible] leafed grass) but did not harm t[illegible] berries.

Dr. Dana's tests showed that 2,4[illegible] also successfully controlled two typ[illegible] of weeds—sticktights and ragwee[illegible] Amino triazole, he said, successful[illegible] killed horsetail and ragweed and m[illegible] be useful against a wide range [illegible] broad-leafed weeds. Dalapon contr[illegible] led sickle grass and sledge grass, [illegible] said.

Dr. Dana said that one crop [illegible] cranberries was lost after Dalap[illegible] was applied, but the next year t[illegible] berries came back stronger than ev[illegible]

NEW PEST FOUND IN OREGO[illegible]

PORTLAND, ORE.—Western ras[illegible] berry fruit worm has been fou[illegible] near Nehalem, Ore., according [illegible] F. P. Larson, survey entomologist.

Special Retail Section

Better Selling

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A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

Lime and Fertilizer Distribution Practices in the Eastern Panhandle of West Virginia

EDITOR'S NOTE

Fertilizer and lime dealers will be interested in reading about the operations, equipment, services and pricing and credit policies of other dealers as summarized in the accompanying article by Norman Nybroten and James H. Clarke. Norman Nybroten is agricultural economist at the West Virginia University experiment station and professor of agricultural economics in the college of agriculture. James H. Clarke is associate agricultural economist at the West Virginia University experiment station and associate professor of agricultural economics in the college of agriculture. The article is reprinted from the experiment station's bulletin 390.

Introduction

Fertilizer and lime are increasing in importance as production supply items in farming operations in the Eastern Panhandle of West Virginia. Many changes are taking place in the manufacturing and distribution of fertilizers. What changes are adopted, and how they are adopted, are of special concern to farmers, dealers and manufacturers. Of special interest to farmers are such considerations as: (1) availability of the kinds and grades of fertilizer desired; (2) services available; and (3) costs of materials and services.

Present methods of lime and fertilizer distribution in the area are not well known. For this reason a study of these methods, as well as relevant trade opinions of dealers in the area, is being made by the West Virginia University agricultural experiment station and Farmer Cooperative Service, U.S. Department of Agriculture.

Because many of the large orchardists in the area do not buy their fertilizer through in-state dealers, their procurement practices cannot be reported as a result of the work completed to date. Their fertilizer procurement problems need to be studied in a different manner. Also, grocery stores and the like, which handle small amounts of fertilizer, were not included in this study.

Kinds of Dealers in the Area

Forty-one dealers who handle fertilizer, lime, or marl in the Eastern Panhandle were included in this study. Twenty-two of these dealers had retail stores, 13 were without fixed retail establishments other than their homes, four were farmers, and two were manufacturing-sales establishments. An estimated 21 thousand tons of fertilizer were sold in the year July 1, 1953, to July 1, 1954, by these dealers. Six of the 22 retail stores were either local farmers' cooperatives or affiliated agents of a regional cooperative organization. These stores were larger than the typical non-cooperative retail store and handled an average of 480 tons per store during the period, compared with an average of 132 tons for the non-cooperative retail stores.

Most of the fertilizer dealers reporting handled several "lines" of farm supplies. Twenty-one reported either fertilizer, lime or marl as the most important retail line. Three indicated fertilizer as their only retail line, two stated that marl was their only retail item and two reported lime as the only farm supply item they retailed. In the Eastern Panhandle, the general farm supply store is the most common type of business establishment handling fertilizer.

The volume of fertilizer handled by individual establishments varied greatly—from less than a ton per year to several thousand tons. Most of the fertilizer distribution is controlled by two organizations. The six largest establishments handled about 87% of the total tonnage. The number of dealers, according to tonnages handled for the year July 1, 1953, to June 30, 1954, was as follows:

TONNAGE HANDLED	NO. OF DEALERS
Under 100	26
100-499	9
500-999	3
1,000 and over	3
Total	41

About 60% of the fertilizer was sold during the first half of the year. It was estimated that 5% of the fertilizer was for non-farm use.

Lime and marl distribution has become the principal business for several people in the area. There are eight operators who have no other business and are not farming. Most of these concerns are small, and the operator usually drives his own truck.

Only one of the dealers in the area was equipped to mix fertilizers. This concern mixes on a commercial basis and also serves other dealers in the area.

Operations and Equipment

Bulk fertilizer is handled by seven dealers, who sold about 80% of the fertilizer in the area. Four of these dealers do their own hauling and have spreading equipment. The wholesale distributor does the hauling and spreading for the other three. The four who haul have 2-ton spreader trucks—three fan-type spreaders, and one auger-type spreader.

Hauling and spreading charges varied from $2.50 to $4.50 per ton. Two dealers charged $1 extra per ton for applying on plowed ground; one dealer charged $1.25 per ton extra for loads of less than five tons; and three dealers charged extra for longer hauls. In all instances the dealers spread the bulk fertilizer if they hauled it, so there was no separate charge quoted for spreading.

Detailed records were kept on the spreading of dry bulk fertilizers. Except in rare instances, it was possible for the driver to go directly to the field and immediately spread the fertilizer. On a few occasions, however, the driver had to wait as much as

(Continued on page 12)

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

Insecticides offer a relatively high percentage of mark-up for chain and independent grocery stores, perhaps accounting for the rapid growth of insecticide departments in such stores.

One merchandiser claims that a butter display, using 5.7 sq. ft. of store space, had a gross profit per square foot per week of $12.21 while an insecticide display occupying only .4 sq. ft. had a gross profit per square foot for the same week of $21.65.

The increasing emphasis insecticides are getting from the supermarkets is summarized in the publication, Food Topics, in an article by R. G. Martin, Sr., president and general manager of Cook Chemical Co. Much of what Mr. Martin writes applies also to other retailers of insecticides.

Mr. Martin states:

Operators interested in increasing sales and in better serving their customers will do well to look into the growing sales bonanza in insecticides.

"If I were an operator I would check the profits involved in the sale of insecticides and having satisfied myself that they are high, I would then make every effort to really merchandise these products.

"In my analysis of the household insecticide field, I would learn that since World War II this market has grown from a relatively insignificant operation to a thriving business of well over $100 million at the retail level.

"And, if I were an operator, I would know that further growth in the household insecticide market is virtually a certainty as a result of

(Continued on page 11)

Irrigation Makes Big Strides in Delaware

NEWARK, DEL.—Farm use of irrigation equipment in Delaware to increase crop yields has almost doubled in just a year's time, says Dr. R. O. Bausman, head of the department of agricultural economics at the University of Delaware.

He reports that in 1954, there were 62 Delaware farmers using irrigation equipment on about 5,800 acres of crops. Last year, this jumped to 108 farmers irrigating 11,100 acres of crops. So far this year, 124 Delaware farmers are making use of irrigation equipment for their crops.

Kent County farmers own about 50% of the irrigation rigs, Mr. Bausman said. The rest are divided between New Castle and Sussex. Potatoes and truck crops make up about 90% of the acreage irrigated.

Connecticut Field Day Visitors to See Soils, Fungicide Research

NEW HAVEN, CONN.—Visitors at the Aug. 15 field day of the Connecticut Agricultural Experiment Station can get a front-line report of the long battle between the plant scientists and Dutch elm disease.

At the station's Mt. Carmel Farm one young elm tree among the hundreds in orderly rows may someday confirm the effectiveness of a chemical treatment to protect healthy trees, or cure those diseased. While Connecticut research has helped make possible the marked improvement in Dutch elm disease control methods during the past decade, the disease continues to take its yearly toll.

In the station's spiral plots, new spray materials are being tested on tomatoes, snapdragons and celery. Tested in the laboratory and greenhouse, these fungicides are now getting their first field test. All may ultimately be discarded, but from these and many more trials may finally come a new "standard" material for farmers and backyard gardeners.

Other field exhibits relating to plant disease control have to do with internal browning of tomatoes and control of fireblight and apple scab.

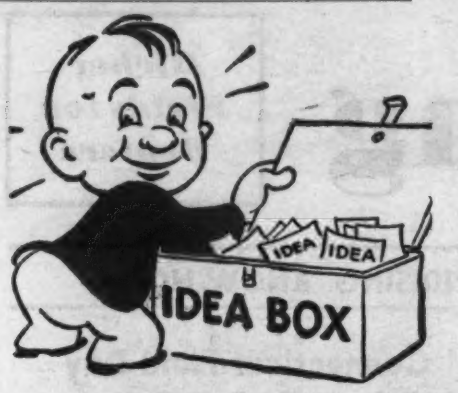
Of special interest to growers using irrigation is the department of soils study now underway on effects of soil conditioners on irrigated plots. Widespread use of irrigation raises the question as to whether water as generally applied will also slake and puddle soils, reducing the effectiveness of the water and leading to surface-crusted soil. Experiments in 1954 showed that this occurred on soils irrigated early in the season. The structure and yields held up, however, in plots treated with soil conditioners.

Experiments this year will show field day visitors how soil scientists seek further information on this problem, using soil structure measurements of the soil, from the surface to plow depth, in irrigated and non-irrigated plots. Effects of cultivation, chemical weed control, and soil conditioners are under study in this series of experiments.

Other exhibits of the department of soils at the field day include an illustrated explanation of the soil-testing technique, with a display of "ingredients" found in a productive soil, and "before-and-after" examples of grass grown on soils for which the department made recommendations for improvement. How long soil conditioners remain effective is the subject of another study of Connecticut soils. So far the studies indicate a soil-conditioner effectiveness of about 2 years. Other trials at the experimental farm have to do with the best timing of rotation and green manure crops for Connecticut vegetable growing.

MOST TROUBLESOME PEST

GENEVA, N.Y. — While codling moth, apple maggot or red-banded leaf roller may be the chief troublemakers in certain orchards or areas, leaf-feeding mites are the most widely spread and troublesome pest with which fruit growers must contend, says Cornell entomologist S. E. Lienk at the New York Experiment Station at Geneva.



What's New...

In Products, Services, Literature

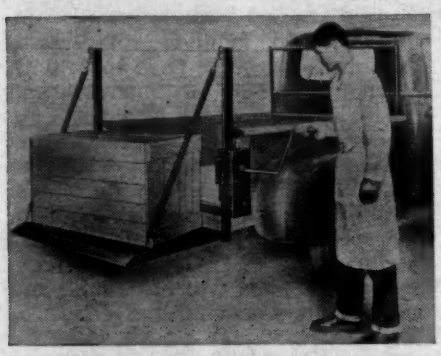
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6448—Sales Aids

Anhydrous ammonia sales aids, comprising newspaper mats, display banners, posters, radio commercials and promotional literature are available to dealers from the Agricultural Ammonia Institute. A nominal charge is made for some of the sales aids, according to institute officials. Secure more complete details and price quotations by checking No. 6448 on the coupon and mailing it to Croplife.

No. 5509—Elevating Tail Gate

Mid West Body & Manufacturing has announced its new "Jiffy-Lift" elevating tail gate for pickup and



express truck bodies. The product is a completely "packaged" kit, ready to install. It weighs 175 lb. and only six bolts are needed for installation. The all-steel, ramp-type elevating tail gate has a capacity of 600 lb. The patented design features a lifting mechanism, having ball bearings throughout for easiest operation, company spokesmen say. Secure more complete details by checking No. 5509 on the coupon and mailing it to this publication.

No. 6449—Soil Sterilant

A six-page leaflet which outlines the various methods by which the soil sterilant, trade-named Vapam, may be used to destroy weeds, fungi, nematodes, and soil insects has been published by Stauffer Chemical Co. The leaflet details the types of pests which the water-soluble soil sterilant will control and how it may be applied by hand, sprinkler, injection, plow sole and in irrigation waters on soils for preplant treatments of seed beds, potting soil, ornamentals, nursery stock, field crops, row crops, orchards, vineyards, turfs and lawns. Copies are available without charge. Check No. 6449 on the coupon and mail it to Croplife.

No. 5506—Conveyor

A new bulletin by Alvey Conveyor Mfg. Co. describes the application of its automatic Vertical Reciprocator conveyor for use in multi-level handling of palletized cases. The unit is self-loading and self-discharging. It automatically transfers palletized cases up or down, to any predesignated floor level, it is claimed. Complete controls and safety devices are incorporated in a fully integrated installation, the bulletin points out. The four-page illustrated bulletin, No. ALV-130, will be mailed without charge if No. 5506 is checked on the accompanying coupon and mailed to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6443—Soil Fumigant

A product, called by the trade name, Vapam soil fumigant, is being offered by the Du Pont Company. According to company spokesmen, the chemical when applied to moist soil before planting, forms vapors which kill or suppress many types of undesirable organisms, including weed seedlings, certain soil insects, fungi and nematodes. It is recommended as a pre-planting treatment for soil in plant propagation beds (ornamentals and vegetables), in new turf areas and in fields for ornamental plants. The product can be mixed with water and applied as a surface spray with a sprinkling can, hose proportioner or overhead sprinkler. Additional wetting after application seals the chemical in the soil. It may also be placed at depth in the soil by being sprayed on the plow sole or injected with standard fumigation equipment. To secure more complete details check No. 6443 on the coupon and mail it to Croplife.

No. 6445—1-Ton Shipping Containers

A new 24-page booklet describes 1-ton shipping containers produced by the Columbiana Boiler Co., Steel Plate Fabricating division, for handling liquefied and compressed gases, and chemicals such as liquid chlorine, anhydrous ammonia, sulphur dioxide and other commodities requiring ICC specification containers. The booklet includes recommendations of the Chlorine Institute for safe handling, with a special section on employees' protection. Institute tables and charts give characteristics of liquid chlorine, including density and pressure at temperatures F., and solubility in water and other solvents. Plant photos illustrate the manufacture and usage of the firm's containers, storage vessels, galvanizing and tinning kettles and motor cargo, portable and skid tanks. A special feature describes the delivery and use of anhydrous ammonia as soil fertilizer with Columbiana containers. To secure the booklet check No. 6445 on the coupon and mail it to Croplife.

No. 6447—Science in Industry

Six scientific principles and six inventions that reshaped civilization are described in "Science in Industry," a new booklet issued by the Du Pont Company. The principles are Einstein's theory of relativity, Lavoisier's analysis of the composition of air, Newton's law of universal gravitation, Darwin's theory of evolution, Pasteur's theory of bacteria, and Copernicus' concept for the solar system. The six inventions include: The airplane, the telephone, the steam engine, movable type, the automobile and the clock with interchangeable parts. Also shown in the booklet are six of the great monuments to science and invention: The Roman aqueduct at Nimes, the Hoover Dam, the Empire State Building, the Panama Canal, the Savannah River atomic energy plant, and a Detroit automobile assembly line. To obtain the booklet check No. 6447 on the coupon and mail it to Croplife.

No. 6444—Potash Mining Booklet

The National Potash Co. has prepared a booklet describing its project to produce potash near Carlsbad, N.M. Titled, "A Basic New Source of a Basic Plant Food," the booklet tells how the company will begin mining in January, 1957, muriate of potash from its $19,000,000 plant with an annual capacity of 400,000 tons. Also described is the company's offer of assistance in the form of free technical service to assist fertilizer manufacturers in the problems of granulation and in other production difficulties. The booklet may be secured by checking No. 6444 on the coupon and mailing it to Croplife.

No. 6446—First Aid Catalog

A new 6-page first aid catalog is available from the E. D. Bullard Co. With it comes a card titled, "Instant Guide to First Aid." It contains information on first aid treatments and folds to fit into a wallet or purse. The catalog contains a listing of over 100 unit packs, photographs of kits, catalog numbers and descriptions of kits and units for ordering purposes. Check No. 6446 on the coupon and mail it to secure the literature.

No. 6442—Promotion Program

Information about the new marketing program for its products is available from Diamond Black Leaf Co. The promotion centers around more than a score of printed pieces suitable for distribution to the prospective buyer and user and scheduled on radio, television and in newspapers and magazines. A number of new products and package designs are also announced by company officials. To secure more complete information about the program, check No. 6442 on the coupon and drop it in the mail.

No. 6441—Spray

A new form of calcium arsenate which can be applied as a low gallonage spray instead of a dust has been developed by General Chemical division, Allied Chemical & Dye Corp. for cotton boll weevil control. According to company officials, growers using standard cotton spraying equipment can now get the full benefit from calcium arsenate since the spray form is less wasteful, gives longer residual effect, and better insect control than the conventional dust which has been used for generations. The new product is claimed to eliminate drifting arsenical dust and is being sold under the name of Genera

Send me information on the items marked:

- ☐ No. 5457—Bag Reinforcement
- ☐ No. 5490—Time-zone Guide
- ☐ No. 5506—Conveyor
- ☐ No. 5509— Tail Gate
- ☐ No. 6441—Spray
- ☐ No. 6442—Promotion Program
- ☐ No. 6443—Soil Fumigant
- ☐ No. 6444—Potash Booklet
- ☐ No. 6445—Containers
- ☐ No. 6446—First Aid Catalog
- ☐ No. 6447—Science Booklet
- ☐ No. 6448—Sales Aids
- ☐ No. 6449—Soil Sterilant

NAME .....

COMPANY .....

ADDRESS .....

SLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

hemical high suspension calcium rsenate. It is said to be compatible ith other cotton insecticides and an be used in combination sprays o control a variety of pests. To se- ure more complete details check No. 441 on the coupon and mail it to roplife.

No. 5457—Bag Reinforcement

A new sewn multiwall paper ship- ing sack featuring reinforced end onstruction has been announced by emis Bro. Bag Company. The rein- orcement consists of strips of kraft aper between plies at the bag's top nd bottom, said to give the effect f an extra ply at the points where ost sewn multiwall bag breakage ccurs. The new bags, called Strength-end" by the company, have een undergoing tests with a variety f products. The reinforcing strips n the bags are spot pasted to ad- acent plies of paper to hold them in osition, making them an integral art of the bag construction. Thus, he strips may be applied to both ewn valve and sewn open mouth ags. To secure more complete de- ails check No. 5457 on the coupon nd mail it to this publication.

No. 5490—Time-Zone Guide

A guide to time-zone and daylight aving time differences in the U.S. as been published by U.S. Industrial hemicals Co., division of National Distillers Products Corp. The time hap measures 8½ by 7¼ in. and is f a size that will fit conveniently nder a desk glass or on a bulletin oard. It shows at a glance the states sing daylight saving time and also he states in which most cities of 5,000 population or over use daylight aving time. The guide is available ithout charge. Check No. 5490 on he coupon and mail it to secure the uide.

Corn Borer Damage To Delaware Crops Likely to Set Record

NEWARK, DEL.—The corn borer, which cost each Sussex County corn rower an average of $111 in dam- ges last year and wreaked only lightly less havoc on the crop else- where in Delaware, is well on its way this season to topping last year's ecord damage total, says Dr. Louis Stearns, head of the entomology de- partment at the University of Dela- ware.

His field surveyores say that in- estation is more severe this season han it was at the same time last ear. At the end of the crop season ast year, about 67% of the corn lants in the state had been attacked y the borer and there was an aver- ge of 241 borers per hundred plants n all the fields sampled. In Sussex ounty, the infestation reached the ecord total of 323 borers for every 00 corn plants.

The borer also has made heavy at- acks this season on the state's 9,500- cre potato crop, reports Dr. Stearns. He warns that all corn will suffer ntil harvest from the combined at- ack of borers, earworms, sap beetles, apanese beetles and fall armyworms.

COMMITTEE CHAIRMEN

LOUISVILLE—R. D. Wallace, orks manager of the Henderson, Ky. lant of Spencer Chemical Co. has een named chairman of the Business limate Committee of the Kentucky hamber of Commerce. Barney A. ucker, manager of the Knoxville ertilizer Co. at London, has been amed head of the Management Com- ittee.

OVER THE COUNTER

(Continued from page 9)

stepped-up advertising and promotion at the manufacturing and retail levels. These programs are creating greater consumer acceptance by broadening the housewife's knowledge of insects and how to cope with them.

"As insecticide sales increased over the past years, the retail sales price went down steadily. In high-pressure aerosol insect killers—which account for the major share of this business — prices were as high as $3.50 a unit in 1948 when some 10 million units were sold. Last year, when sales were about five times greater, prices averaged under $1 a unit.

"But profits for the retailer remained high. According to a recent survey comparing sales and profits of insecticides to food products, it was found that these bug killers were more profitable than butter, for example, with respect to square feet of store space allotted to these items in the super.

"I would do my utmost to cash in on the profits waiting for me in insecticides. I would take into account the important role my store can play as an ammunition depot for dispensing such weapons to housewives who are eager to protect their families from the ravages of the insect world—spreaders of disease and filth, and spoilers of foodstuffs, clothing and home furnishings.

"The bulk of household insecticides is now sold in chains and independent grocery stores—a trend away from sales in hardware, department and other outlets. In the case of one particular brand, over 80% of sales are made in food outlets.

Space Allocation

"I would pay as much attention to the allocation of my valuable shelf space to insecticides as I do to all other items in my store. I would feature only those brands supported by extensive and efficient advertising to draw the customer into my store. I would also limit the number of brands I stocked to the fast-moving insecticides which are backed by a performance guarantee.

"I would also look to the manufacturer who will provide me with hard-hitting merchandising aids to assure quick turnover. I would attractively display sufficient stocks of these insecticides so that they will be easily available to my customers.

"I would tie in insecticides with special sales, such as those pertaining to housecleaning, picnics and any others with which these destroyers of insects can be so ably and forcefully merchandised.

"I would particularly acquaint myself with any unusual or particularly heavy insect infestation and direct my merchandising program in such a way to secure the top volume to be derived from a defensive campaign.

"I would recognize the fact that insect control is a year around job, not just a seasonal one, although hot weather does intensify the insect problem. Realizing this, I would plan for a profitable year-long business in insecticides."

CONNECTICUT FIELD DAY

NEW HAVEN, CONN.—Paul B. Sears, chairman of Yale University's conservation program and president of the American Association for the Advancement of Science, will be the principal speaker at the annual field day of the Connecticut Agricultural Experiment Station, at Mt. Carmel Experimental Farm, Aug. 15. He will speak on "Natural History of Floods."

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

William C. Franklin, Baltimore, Md., was named as acting president of Virginia-Carolina Chemical Corp. by the firm's newly-constituted board of directors. V-C's former president, Joseph A. Howell, was replaced when stockholders of the firm voted against the management in favor of an insurgent group headed by Rupert T. Zickl, of New York, during a special meeting in Richmond July 18. Six new board members were named and resignations of three old board members were accepted by the new group.

Soil bank agreements for 1956 have indicated broad interest on the part of farmers particularly in the Great Plains and Corn Belt states. Acreage reserve programs of wheat, cotton, corn, rice, peanuts and tobacco may total as much as 6 million acres, according to estimates.

A program featuring panel discussions on what and who influence farmers to buy was announced by the National Agricultural Chemicals Assn. for its 23rd annual meeting at Spring Lake, N.J., Sept. 5-7. The Assn. will elect new officers for the next two-year period.

U.S. Borax and Chemical Corp. announced that as a result of the merger of U.S. Potash Co. and Pacific Coast Borax Co., the new firm will locate its administrative office in Los Angeles in the company's office building, 630 Shatto Place. J. M. Gerstley is president, P. J. O'Brien vice president. J. F. Corkill will head the Pacific Coast Borax Co. Div. and Dean R. Gidney, the United States Potash Div.

Facts and figures on fall fertilization—to help manufacturers, distributors and retailers boost autumn business—were presented in a special section of the July 23 issue of Croplife.

Congress was asked for a $2.5 million appropriation to expand the campaign to control the Mediterranean fruit fly in Florida . . . The J. R. Simplot Co., Pocatello, Idaho, announced the opening of a new phosphate mine on the Idaho-Montana border a short distance west of Yellowstone Park.

A possible shortage of benzene because of the steel strike, threatened basic manufacturers of pesticidal materials that use this raw material. The steel industry's coke ovens supplied a large portion of the chemical trade's benzene needs.

R. W. Ludwick, State College, N.M., was elected president of the Association of Southern Feed and Fertilizer Control Officials at the group's 14th annual meeting at Roanoke. E. W. Constable, Raleigh, N.C., was made vice president and Bruce Poundstone, Lexington, Ky., was re-elected secretary-treasurer. M. P. Etheredge, State College, Miss., is retiring president.

An appropriation of $45,000 for control of an infestation of grasshoppers in southern Iowa, was granted by the state, on July 9. The move was expected to be in time to bring the infestation under control before serious damage was done to corn and beans, in particular.

Experiments with 2,4-D against sagebrush on western ranges showed that the unwanted plant can be controlled with this chemical. As a result, USDA is recommending the use of 2,4-D for control of this unpalatable plant which covers millions of acres in the west.

The U.S. Bureau of Census reported that May production of anhydrous ammonia totaled 310,422 tons, a gain of 1% over the production of April. Output of ammonium nitrate, however, was down slightly in May as compared to the previous month.

Factors involved in making recommendations for fertilizers were studied in the 35th annual meeting of the Del-Mar-Va Peninsula Fertilizer Assn. held at Ocean City, Md., June 30. Some 125 fertilizer men were in attendance. Dr. H. L. Dunton, Virginia Polytechnic Institute, was featured on the program.

A three-day rain ending July 4 acted as a temporary deterrent to the destructive activities of hordes of grasshoppers in Iowa. Dr. H. M. Harris, state entomologist, however, said that broader control measures would have to be taken if the infestation were to be halted. The state legislature was asked for an emergency appropriation of $45,000 to be used in grasshopper control.

A number of technical papers covering the general theme of increasing the efficiency of fertilizers, were presented at the seventh annual Regional Fertilizer Conference held at Yakima, Washington, June 28-30. Speakers included representatives of fertilizer manufacturing firms and state experiment stations in the Pacific Northwest.

West End Chemical Co. and Stauffer Chemical Co. announced that their respective boards of directors approved a plan of merger of West End into Stauffer. West End produces borax, soda ash, salt cake and lime at its Searles Lake, Cal. plant. Stauffer has long been exclusive sales agent for West End's borax.

Although consumption of fertilizers in the U.S. and territories showed a decrease of 0.22% during the fiscal year ending June 30, 1955, the total use of plant food nutrients set a new record, according to the annual fertilizer use report issued annually by the U.S. Department of Agriculture. Total tonnages of fertilizers amounted to 22,723,705 tons, 49,794 tons less than the previous period. Plant nutrients, however, amounted to 6,119,841 tons, which was 224,283 tons (3.80%) over that used in the previous year.

The Agricultural Ammonia Institute reported that sales of NH_3 in the January-to-May period showed an increase of 17.38%. This figure was based on reports from AAI members in 25 states and Canada. Reported sales totaled 30,471 tons for the five month period, as compared with 25,958 reported in the same period of last year.

Doing Business With

Oscar & Pat

By AL. P. NELSON
Croplife Special Writer

Herman Meyer was a retired carpenter who had always had a large garden and about four fruit trees, and now he came to the Schoenfeld & McGillicuddy store for some insecticide.

"Oscar," he said, "I want some arsenate of lead for my white potatoes. By golly, there is a lot of bugs this year."

Because Pat was out in the warehouse, and Tillie was busy at the typewriter, Oscar got up and went to wait on Herman. "How much do you want?" he asked.

"Oh, I will take about three pounds," Herman said, a stubby finger rubbing his iron grey mustache. "I want to give them two good doses about ten days apart." Then Herman added, "Are you saving any money these days?"

It was a topic the two men had in common. They always discussed it wherever they met, even outside the church on Sunday mornings.

"Ach, not the way money is spent around here," Oscar grunted wrapping up the arsenate of lead. "I am lucky we get enough to eat."

"Oh, is that so?" Herman intoned. "You fellows are awfully busy, nein? Put some glue on your fingers, both of you. Maybe some gelt sticks there so long." And he laughed at his own joke.

Oscar looked very sour as Herman dug into a worn, scuffed leather pouch for some money.

"I tell you I have saved a lot of money all these years the way I spray my potatoes," Herman offered as he laid down the money.

"Oh?" Oscar replied. He always hated this small talk one had to listen to. He wanted to get back to his desk and figures.

"Ja," Herman cackled. "I mix my spray in a big pail, ach, and then I use an old whiskbroom."

"Whiskbroom?" echoed Oscar. "What for?"

Herman waved at Pat McGillicuddy who had come in and was at his desk. "Well, I dip the whiskbroom in the pail of spray, and then I 'swish' it down and cover the whole plant. By golly, it is easy and I save buying a sprayer."

Oscar's eyes showed a faint glimmer of admiration. His eyes always glowed when he heard of someone saving money in a way other people never dreamed of. People who thought up ways to save money were the salt of the earth, Oscar figured, himself included.

"Well, that is fine, Herman. I can see your head is working all the time."

"Ja," Herman said with satisfaction, closing his money pouch. "When I am awake, anyway."

By this time Pat had come forward. "I know you are a good gardener, Herman," he offered, "but I think that one of these new air pressure sprayers for $11 is better than your whiskbroom."

"Ja?" Herman said, his grey eyes large with surprise. "How you figure, Pat?"

"Well," said Pat slowly. "When you slap spray on potatoes with that whiskbroom, it is all drops of water and arsenate. It doesn't go very far. A spray is water, arsenate and air, all mixed. You don't pay for the air, and it makes the arsenate of lead go farther. If you use an air pressure sprayer you wouldn't need more than one pound of arsenate a year for that little patch of potatoes."

Herman was shocked. "Would one pound last for two doses—ten days apart?"

"I think so," Pat stated.

Herman looked from Pat to Oscar, then back at Pat. The Irishman continued. "And that is not all, Herman. With an air pressure sprayer, you can spray under the potato leaves very easily, get the bugs that are feeding there and you can also spray the stalks of the plant. You can't do that with the whiskbroom."

Now it was Herman's turn to swallow hard. "Ja, ja," he said. "What you say sounds all right. It's those stinkers on the stalks that make me lots of trouble. I always have to wait for them to come up to the top of the plants to eat the poison. That takes a day or more and by that time if we get a storm, then I have to whisk the plants again—the old stuff is all washed away."

"Yes, it is wonderful to save where a fellow can in growing potatoes," Pat agreed, "but it is also wise to make this insecticide go the limit by using it in an air pressure sprayer."

"Ja," said thrifty Herman, "I can see that. I like the idea of using the air. It is free, even if it is hot sometimes." Now he turned to Oscar and frowned. "Oscar, why didn't you tell me this before? Why you let me buy three pounds of arsenate of lead every year and waste money? With what I saved I could have one of them sprayers and use free air."

Oscar flushed. "Ach, why—I—I."

"I know," Herman accused. "You were just anxious to sell me more arsenate of lead so you could make more sales and profit. By golly, I didn't think that of you. Ach, I thought you was a friend of mine, and now—"

"Oscar meant all right," Pat interrupted gently. "He didn't want to hurt your feelings. Lots of people around here put on arsenate of lead with whiskbrooms, but we are converting them one by one. I have checked deeply into the subject. I have sprayed my own potatoes with the sprayer and the whisk broom method and checked results."

"You have?" Herman asked.

Pat grinned. "And I know how much you like good potatoes. I am growing a new brand of Irish potatoes, and when I harvest my crop this fall I am going to give you a peck to try. And if you want some seed next spring, say a half peck, I'll give you some."

"Free?"

"Why not, we are friends, aren't we?"

Herman smiled. "By golly, as the feller says, you can learn something every day, if you keep your ears open. Pat, show me how to work one of those air sprayers. Maybe I buy one right now and use lots of that free air." He turned to Oscar, a stern look on his face. "Take back these three pounds of arsenate and give me a one pound package. Schoenfeld, if I was you, I would take care of my customers better, by golly. Get wise to yourself, you big bratwurst."

Oscar choked and his face got red. Insulted as he was, he held his tongue by clamping his teeth on it until it hurt. He would fix that wise Herman. The next time Herman did sparetime work carpentering around the church and sent in his bill, he would take a 2% discount on labor as well as materials by the 10th. Then watch that old fellow yell. Maybe he had forgotten that Oscar was the church treasurer, with another two years to serve on that term.

RINGING THE CASH REGISTER

Don't Rush Sales

A certain farm dealer who has considerable experience with route selling claims that he gets more orders when he gives the farmer the impression that he is not hurrying and anxious to get an order and leave. The dealer says farmers will "warm up" much better to a casual approach. He frequently will open a converation about the farmer's cows or his flocks, talk about the weather or his family, and generally gives the impression that this is the only call to be made that day. Finally, the conversation will get around to the farmer's needs. When the dealer gets the order he pulls out an old envelope, letter or card and jots down the order. Invariably, this will bring a chuckle from the farmer and a comment such as, "Some businessman, doesn't even have an order book with him." However, the dealer keeps the order book in his vehicle and when he leaves the farmer's yard he transfers the order from the improvised order blank to his regular book.

Budget Needed

Most retail store operators who have set up an operating budget never discontinue the practice. Planning an operating budget is a great deal like planning a vacation trip, one experienced trade leader says. You decide where you want to go—and this concerns the over-all volume, gross income, operating expenses and net margin; how far you want to go each month; what expenditures may be allowed by the gross income; what costs will be, especially salaries which account for about one half of a firm's expenses; and what capital is necessary to keep the business in good shape. Budgeting is often wrongly thought of in a restrictive sense; actually, it might be more properly called a business forecast.

DISTRIBUTION

(Continued from page 9)

an hour for the farmer to designat where the fertilizer was to be spread The fields upon which bulk fertilize was spread were larger than th average for the area. It took an aver age of about four minutes per acre t do the spreading under the field con ditions (rock outcropping frequent encountered in the area. (For furthe details as to bulk spreading practice see table 1.)

Table 1—Operating Factors in Spreading Bu Fertilizer as Reported by Eight Dealers in the Eastern Panhandle, 1953-54 Season

Item	—Range— From	To	Averag
Tons of fertilizer per load	2.8	6.0	4.6
Miles to farm (one way)	1.5	75.0	19.7
No. of acres in field	7.0	70.0	23.1
No. of minutes per load used for:			
Loading	15.0	40.0	21.9
Travel to farm	10.0	185.0	54.7
Spreading	45.0	120.0	78.8
Travel back	10.0	150.0	44.4
Other	15.0	125.0	47.5
Total minutes per load	120.0	435.0	217.5
Miles per load in round trip including the spreading	9.0	155.0	49.6
Miles per load traveled while spreading	4.0	18.0	9.2

The practice of field mixing has developed to a limited extent in the area. One three-hopper "Gandy" spreader was operated near Wardensville in the spring and summer of 1955. This machine is owned by an individual, but its use is encouraged by a cooperative, which furnishes the fertilizer ingredients. This spreader mixes three concentrated ingredients according to a desired formula as it applies fertilizers to the soil. This method had two principal advantages over the ordinary dry bulk distribution—(1) the mixture could be adjusted to the exact fertilizer requirements of individual fields or parts of fields, (2) savings were possible because less weight was being hauled over the fields as well as to the farm.

The owner of the Gandy spreader stated that hauling the spreader on a trailer in order to move it on the public roads is a disadvantage. Also, it took more time to cover an acre than did the spreader trucks. Depending upon the type of power used for pulling, this spreader might be usable on steeper ground than the truck spreader. In general, those who used this spreader were rather enthusiastic about its possibilities.

Liquid fertilizer has not been used extensively in the area. One dealer was equipped to handle anhydrous ammonia but did not use his equipment to any great extent. There was a great variety of opinion among the dealers as to the future of liquid fertilizer in the area. Some stated that they thought it is the "coming thing," and others were indifferent to its possibilities.

The handling of bulk fertilizer, now a fairly common practice, has been adopted by the larger firms in the area. Some of the other practices have been, or are being, pioneered by small firms or operators. For example, use of anhydrous ammonia and the three-hopper field mixer-spreader have both been tried out by small operators. The services and operating practices of cooperatives or agents of cooperatives are much like those of other establishments.

Informational Services

Dealers were asked to what extent they advise farmers about the kind of fertilizer needed and general application practices. Twelve of 41 dealers stated their practice as follows: Six sent out pamphlets; three sponsored meetings with personnel from the West Virginia University extension service; and four held farmers' meet-

s, two of which showed movies
d made recommendations to farm-

Only one dealer in the area was
uipped to test soil. Seven stated
t they will send soil samples to
tilizer companies if farmers re-
est it.

Most of the dealers reported that
ey considered more than half of the
ople working in their establish-
nts as competent to advise farmers
their fertilizer needs. Upon being
ked how their employees had gain-
this competency, the following re-
es were received:

URCE OF FERTILIZER INFORMATION	NUMBER REPORTING
tilizer companies and cooperative meetings	12
erature from fertilizer companies	9
unty extension agent	7
erience	3
ually testing soil	2
nt training	1

No information, however, was ob-
ined as to the extent farmers relied
these individuals for recommenda-
ns or considered them competent.

Sixteen dealers gave no definite
urce for such training. Some stated
ey believed that the informational
d educational aspects of the prob-
m were not their responsibilities. A
ore common view, however, seemed
be that the dealer would like more
lp in getting the proper informa-
n to farmers in his area.

rices, Credit, iscounts, and Services

Fertilizer dealers do not have rigid-
fixed price and credit policies. Most
them treat the problem on a per-
nal basis.

Cash and credit prices—Nineteen
alers stated that their price quota-
ns were on a cash-and-carry basis.
en though their prices were quoted
this manner, nine gave credit and
ade no charge for this service. Their
cision to give credit was based on
e particular circumstances bearing
the transaction at hand. Nine
her dealers either charged for
edit or gave discounts for cash. In
any instances it seemed that no
ar-cut policy existed.

Delivery charges—Only four of the
alers stated that they do not give
e delivery service, charging from
to $1.50 per ton for delivery.
me of the others were considering
minimum delivery charge in order
discourage small orders.

Spreading charges—Six different
erators spread fertilizer. Two of
ese charge 50¢ per ton more than
e cash-delivered price; two charge
per ton extra for spreading on
owed ground; and two make no
arge for spreading but have a 5-ton
inimum load. Most of the dealers
ated that they would prefer to have
e farmer both haul and spread the
tilizer.

Quantity discounts—It was not a
mmon practice to give these dis-
unts; only eight dealers indicated
at they gave them. The minimum
antities required by the individual
alers to be eligible for a discount
nged from three tons to a carload.
ost of the dealers quoted a higher
ice on a bag basis than on a ton
sis. Usually there was no differ-
ce in the per-bag price whether
ly one or several bags were bought.
a price difference was made, it
s done on an informal non-quoted
sis.

Other discounts—Discounts were
en for various other reasons. One
aler gave a discount on spreading
arges in fields above a specified
inimum size. Some dealers encour-
ed early-season movement by an-
uncing peak-season prices in ad-
nce and discounting from this price
the fertilizer is taken early. One
ve a discount if the fertilizer was
ordered in advance of the delivery date.

Marl and Lime

Marl—Ten dealers handled marl. The marl was quarried from local beds. Much of it moved out of the area. Prices at the marl beds were quoted from 45¢ per ton and up, but the cash-delivery price was the most important price. This price—to local farmers—ranged from $1.60 per ton and up, depending on farm location with respect to the source. According to the information received, it was possible for any farmer in Jefferson County to get marl delivered for $1.60 per ton.

Lime—Twenty-four dealers handled lime in some form. Nine dealers priced bulk lime by the load. Prices varied from $2.50 to $7.50 per ton on a cash-delivery basis. The top price was for burnt lime. The gross margin reported by dealers ranged from 50¢ to $3.50 per ton. The higher margins were received on some lime moving out of the state. The top margin received from West Virginia farmers was $2 per ton.

Bagged ground lime was handled by two dealers. The hydrated bagged lime, handled by four dealers, was priced from $18 to $24 per ton on a delivered basis. Prices on a delivered basis for less-than-ton lots for hydrated bagged lime were quoted by 19 dealers and ranged from $20 to $28 per ton—but mostly $22 to $24 per ton on a cash-delivery basis. The top price was for burnt lime. Five of the dealers made separate charges for delivery, but their total price came within the range indicated. Margins reported on bagged lime ranged from $1 to $8 per ton, averaging $4.50 per ton.

Dealers were asked whether they make money on lime. Ten stated that they think they are making money, 18 said they are not making money; and one stated he could make money if he could get enough lime. Only one dealer planned to change his practices, and that was to raise the price. Those who lost money stated that they handle lime mainly as a customer service.

Summary

Farmers and fertilizer dealers in the Eastern Panhandle of West Virginia are faced with the problem of

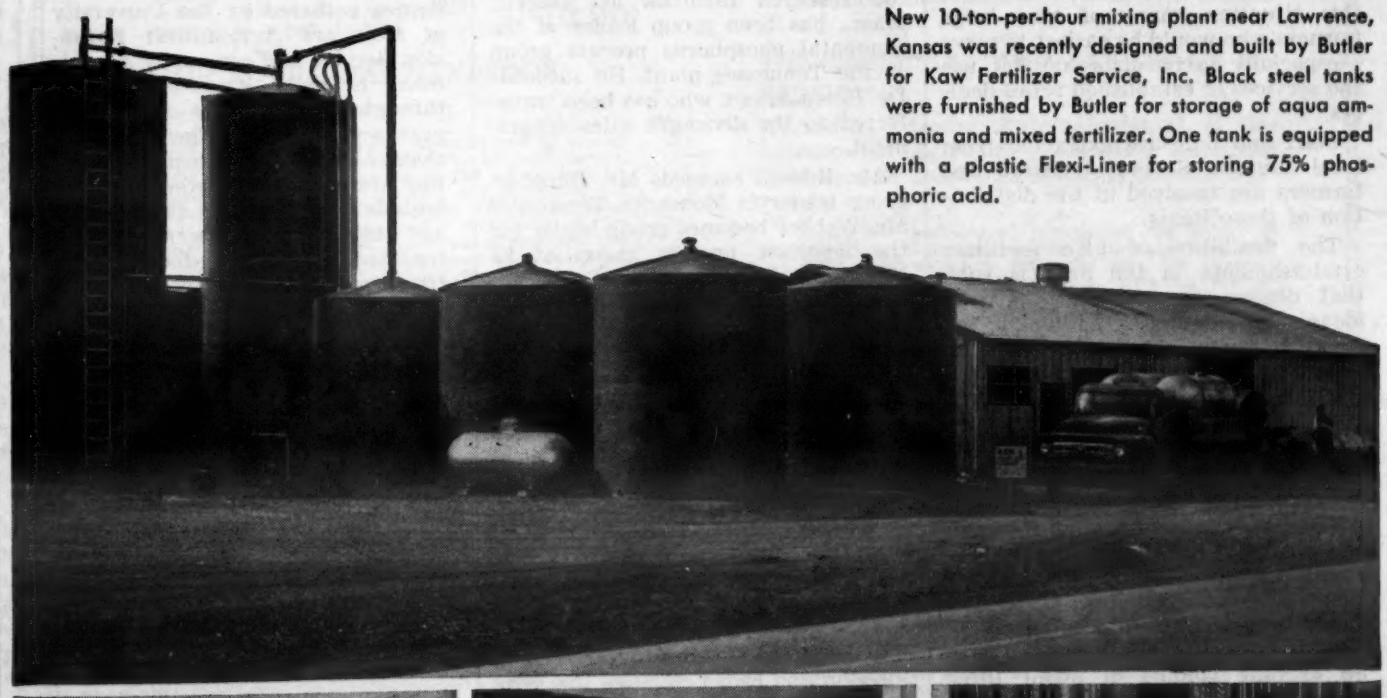
Fast, economical way to get a

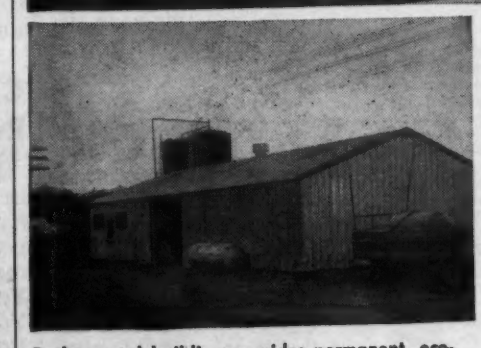
liquid fertilizer mixing plant

ORDER IT COMPLETE FROM BUTLER!

Now, in one "package," you can get a complete liquid fertilizer plant like the one shown here. Everything you'll need for profitable operation is included: storage tanks, heat exchangers, controls, mixers, meters—even the building for the mixing operation and office area. All are Butler-engineered and Butler-built to meet your exact needs and fit your market area. The entire plant is complete and ready to go when it's turned over to you. And with Butler's specialized tank fabrication facilities and fast erection of pre-engineered Butler metal buildings, you're in business sooner, at less cost. Get the important details—write or call today.

New 10-ton-per-hour mixing plant near Lawrence, Kansas was recently designed and built by Butler for Kaw Fertilizer Service, Inc. Black steel tanks were furnished by Butler for storage of aqua ammonia and mixed fertilizer. One tank is equipped with a plastic Flexi-Liner for storing 75% phosphoric acid.





Butler metal building provides permanent, economical shelter for mixers, controls, and field application equipment at Kaw Fertilizer Service.

Anhydrous ammonia is converted into aqua ammonia from tank cars and transports with this Butler-designed converter and heat exchanger.

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responding to a changing technology in both fertilizer manufacturing and distribution. Dealers are not in agreement as to the feasibilities of some of the recent innovations in fertilizer distribution. Some are quite enthusiastic about liquid fertilizer for the area, whereas others are at least very indifferent to it. Small dealers seem as ready, perhaps even more ready, to adopt new practices and products as do the large dealers.

Not only did the 41 dealers included in this study vary considerably in their opinions, but they also varied in the nature of their business, amount of business and their facilities. Thirteen dealers had no business establishment other than their homes. Those having retail establishments were mostly the typical general farm supply store handling several lines—feed being important and most common.

The dealers were in general agreement about the bright future for bulk distribution of dry fertilizer, which is gaining in importance in the area. On the average, a bulk spreader truck spent about four minutes per acre in the field while unloading. Mainly because of rock outcroppings in a third of the fields, it was necessary to make one or more stops during the spreading operation. On the average it took over 3½ hours to take out a load of bulk fertilizer and return the truck. The average distance traveled per load was about 50 miles, of which nine were in the field doing the spreading.

Rather than having rigidly-established policies on credit and discount practices, most of the dealers meet these problems informally—seeming to judge each case on its own merits. They usually do not make a sufficient price differential between cash and credit sales, large and small orders, and long and short hauls. Because of this situation, many of the large farmers who would be easiest to serve —especially orchardists—do not use the services of established retail dealers.

Marl and lime are extracted from local sources. Several truckers and farmers are involved in the distribution of those items.

The flexibility of the fertilizer establishments in the area is such that dealers are receptive to new ideas and methods. Although the managers of the retail establishments feel that their employees are well trained, it is probable that research and further education would help meet some of the business problems resulting from technological change.

There seems to be no significant difference between the operations of cooperative retail fertilizer establishments and other establishments, other than the declaring of patronage dividends by cooperatives. The retail cooperatives seem well supported, with an average volume of about three times the average volume of non-cooperative retail establishments.

Herbicides Tested in West Virginia Plots

MORGANTOWN, W. VA.—Weed killing chemicals are being extensively tested by research agronomists of the West Virginia University Agricultural Experiment Station in corn plots at the Ohio Valley Experimental Substation at Pt. Pleasant.

Since the tests were initiated in 1949, the agronomists have found that the best weed kills result when the chemicals are applied as emergence sprays, that is, just when the corn starts coming up. There is little or no damage to the young corn seedlings at this stage, their studies have revealed.

The yearly tests were begun in 1949. The tests were set up so as to compare the weed populations in corn growing without cultivation or chemical treatment, corn growing with chemical treatment alone, and corn receiving cultivation alone. In each plot, corn yields were recorded, and the weed populations evaluated as to numbers and the proportion of each species present.

Thomas Hurst in New Monsanto Research Position

ST. LOUIS—Dr. Thomas Hurst of Monsanto, Tenn., has been named an assistant director of research for Monsanto Chemical Company's Inorganic Chemicals Division, it was announced here recently.

At the same time, the promotions of Robin Russell of Monsanto, Tenn., and Robert T. Webber of Monsanto, Ill., to group leaders in the inorganic research department were announced.

Dr. Hurst, who will be located at the research facilities at Everett, Mass., has been group leader of the elemental phosphorus process group at the Tennessee plant. He succeeds Dr. Peter Arvan, who has been transferred to the division's sales department.

Mr. Russell succeeds Mr. Hurst as group leader at Monsanto, Tenn., and Mr. Webber becomes group leader for the fertilizer process group at El Dorado, Ark.

Cotton Program

BATON ROUGE—Information on improved production methods, quality harvesting and control of boll weevils will highlight the cotton program during Farm and Home Week at Louisiana State University Aug. 13-16. The cotton program will be held the afternoon of Aug. 14 and repeated the afternoon of Aug. 15.

TURKISH TOBACCO

LOUISVILLE—Seven farmers in Johnson and Floyd counties this year are experimenting with growing Turkish-type tobacco.

OPPORTUNITIES FOR FALL APPLICATION

"Fall fertilization is desirable on:

1. **Most permanent pastures, particularly with phosphate and potash.**
2. **Most hay lands including alfalfa.**
3. **Pastures being renovated by fall incorporation of lime and fertilizers.**
4. **Nearly all turf for special purposes such as athletic fields, parks, cemeteries, lawn, golf courses, etc. (complete fertilizers).**
5. **Grass sod stimulation in orchards (complete fertilizer). For ladino clover and orchards P and K should be applied in fall.**
6. **Starter fertilization for fall grown grains, plus basic requirements of L, P and K for any legumes to be spring seeded in the grains.**
7. **Late summer or early fall seedings of winter cover crops in vineyards and orchards (complete fertilizer).**
8. **Orchards and vineyards of all types.**
9. **Cover crops planted on clean land or between rows of cultivated crops (nitrogen alone or complete fertilizer).**

"In addition to the advantages of fall fertilizer, fields are usually drier in the autumn than in the spring, and fertilizer may be spread with less damage to soil and crop in the autumn."—Howard B. Sprague, head, agronomy department, Pennsylvania State College, State College, Pa.

FARM SERVICE DATA
Extension Station Reports

From the time the plants are set in the field until they are killed by frost, broccoli requires attention to keep it free of insects, says Dr. G. E. R. Hervey of the New York Experiment Station at Geneva.

Broccoli is gaining in importance as a processing crop, but keeping the plants free from worms and aphids poses a problem for growers, he declares. Treating is aimed at cabbage worm control during July and August and at aphids thereafter.

"In most seasons, two to three applications at two-week intervals are required before the heads form," explains Dr. Hervey. "Four to six applications are usually required during the harvest period. If aphids are only moderately abundant, treatments may be made every ten days after September first. If aphids are abundant, however, the plants should be treated every week to insure freedom from insects when the heads go to the processor."

★

A long-standing difference of opinion about average corn yields in Delaware was settled when George Simpson, Houston dairyman and chairman of the Delaware Agricultural Conservation and Stabilization State Committee called a meeting in Washington with representatives from the U.S. Agricultural Marketing Service.

There, Mr. Simpson presented figures gathered by the University of Delaware Agricultural Extension Service and agronomy department in yield surveys made throughout the state during the past several years. These surveys showed that normal corn yields in the state actually were several bushels an acre higher on the average than they had been officially reported by the state-federal crop reporting service.

As a result, the marketing service revised its average normal corn yield figures upward for each of the state's three counties. For Kent County, they were raised from 34.1 bu. an acre to 44.6 bu.; for New Castle County, from 38.9 bu. to 47.8; for Sussex County, from 33.7 to 42.1 bu.

The new figures are official and will be accepted by the federal government in figuring payments for its corn allotment program, Mr. Simpson said. To Delaware farmers, this will mean about $10 an acre more for corn grown under the government allotment program this year, or a total of $250,000 to $300,000 in the entire state.

★

Where certain conditions can be met, the dream of eliminating the cultivator in field-crop production can now come true, according to the department of soils at the Connecticut Agricultural Experiment Station. Eight years of research at the station show what conditions must be met before the cultivator can be tossed up on the barn scaffold with the cutter and the flail.

First, soil organic matter must be at a high level, to maintain a loose friable soil which does not form a surface crust.

Second, weeds must be controlled by chemical and other means.

In soils with a poor structure, cultivation will still be required, but only to break the surface crust.

Soil scientists are interested in ways of reducing tractor cultivation both because of obvious savings in time and money for the farmer, and because tractor traffic can be bad for Connecticut soils. Repeated rolling by tractor tires in plowing, discing, harrowing and cultivating produces at least three distinct compact layers or zones in soils. Deep-rooted legumes help to break one of these compact layers.

Another way is with the experimental subsoiler developed by the station. This tractor attachment permits regular plowing, subsoiling after the tractor wheel has passed, and deep placement of lime or fertilizer in one operation.

★

Harry W. Dengler, extension forester at the University of Maryland, suggests herbicide treatment for meeting the problem of killing stumps and preventing stump sprouts in recently cleared and cutover areas.

Stumps of cut trees may be effectively killed and sprouting prevented, says Mr. Dengler, by using 2,4,5-T or mixtures of 2,4-D and 2,4,5-T. These should be applied at rates of 8 to 16 lb. of acid equivalent per 100 gallons of diesel oil applied to the stump so as to wet completely the top and the sides to ground level. Ammonium sulfamate will also do this job effectively, Mr. Dengler says. It may be applied as crystals to the surface of the stump, or the entire stump may be sprayed at the rate of 4 to 6 pounds per gallon of water.

★

Air dusting of trefoil is being evaluated in a Vermont Agricultural Experiment Station study. Three ten-acre plots are being treated at the Morgan Horse Farm in Weybridge.

The study is aiming at determining the most effective method of controlling the insect complex affecting trefoil seed production, reports George MacCollom, Vermont Experiment Station entomologist.

Air application is almost a necessity in some years. This offers the solution when the land is too wet to be treated with conventional ground equipment.

Each of these plots is receiving different treatment. Mr. MacCollom says that evaluation will be based on the effect of the material on the insect populations throughout the summer and on the harvest of seed. Plot samples will be taken at harvest time to compare yields between treated and untreated areas.

Cabbage Worm Resistance Reported in New York

GENEVA, N.Y.—A steady decline in the effectiveness of DDT for controlling cabbage worms has been noted during the decade that the material has been available to New York farmers, according to the New York Agricultural Experiment Station.

The cabbage looper particularly has become more resistant to DDT, with the imported cabbage worm now showing less susceptibility to the insecticide, according to findings of entomologists at the station.

They report that in western New York concentrations of DDT have been stepped up to 3% to 5% as compared with the 1% to 2% concentrations found effective in the early years of its use.

Keep Competent Employees By Planning a Promotion Policy

By Ernest W. Fair

Handling employees has become almost a science today by sheer necessity. Some years back haphazard methods could be used without too much damage in any firm. Not so today. The absence of such an important thing as a planned promotion policy based on tested principles of merit may result in the loss of the top segment of the firm's staff.

Each program for promotion must be based on individual considerations of each specific company. Applying a generalized system will not only prove inadequate from the management standpoint but that of employees as well. Almost without exception it has been recognized that good promotion policies today are custom tailored to fit one's individual firm.

However there are several factors which should be an important part of any such policy. These are being proven in today's experiences. Their use is bringing results today; their absence costing every firm failing to use them profits in the form of loss of top personnel as quickly as the men and women develop to full efficiency.

Here are the major policies which belong in each company's promotion program. As stated above they should be adapted to the individual local requirements of each concern.

Set up a published policy of promoting from within the company organization. It's the only way to hold onto good employees to begin with as a policy. Many firms work on such a basis but never bother to inform new personnel of such a policy. As a result many a good individual, brought to peak efficiency after an expensive training period, is lost to competition before he or she finds out about such opportunities within our own organization.

This should be clearly set forth to the employee at the time he or she is hired. It should be repeated by every means we have available and particularly emphasized by actual practice and seeing to it that everyone on the staff knows about every such promotion actually made "from the ranks."

Such knowledge that deserved promotions are being made always increases the interest of other employees in the company as well as their desire to serve the interests of the firm. Experience has definitely shown that it also causes other employees to hold that their turns will come next—therefore they remain with the company and labor turnover is reduced.

Use seniority but not as the sole standard for promotion. Many firms are using a straight seniority rating as a basis for promotion with the new job going to the oldest employee. This holds in many union contracts.

It is not, however, a good sole basis for promotion. Too often it passes over a much more qualified individual and it also serves to discourage ambitious younger men and women on the staff.

In actual practice most firms are finding that seniority coupled with ability is a better standard to follow. Some frequently give the eligible individual a week or ten days in which to qualify for the job. Others hold examinations for such posts among the top ten or twenty on the seniority list. This helps make certain that the best available individual is secured for the job rather than simply the oldest on the staff at the time.

Make certain the qualified employee gets the first chance at the job. Where we fail to follow such a policy we may as well not have any promotion program for the whole structure is destroyed by overlooking the best qualified man or woman when a promotion becomes available.

No matter how much a man or woman may love the work they are doing the best incentive for them is still the hope for a better job and more salary. Each time promotion is made on an individual obviously less qualified than others faith in such a future is destroyed for that particular employee.

Opportunity to learn the required information needed to hold the better job should be made available to those men and women who are in line for promotion to that position. Where the nature of their work stifles such an opportunity we not only make it difficult for them to attain personal goals but the company will lose through promoting unqualified individuals. It is much easier to learn ahead of the job than while on it and particularly so in the case of any executive position—even a minor one.

An understudy system of promotion is today being used by many concerns and deserves consideration in our own promotion policy. Under it particularly eligible personnel are given the opportunity to work at the tasks that would be required of them in the next eligible position. This not only shows the employee that the firm has faith in his or her future and that he or she has a definite opportunity for promotion ahead but it also helps to train such individuals in advance so that little break-in will be required when the promotion is actually made.

Keep the "hunch" system out of the promotion program. Such a policy can be too easily influenced by current events or happenings during the week closest to the time of actual promotion. Every firm should have an organized program to implement its promotional system through personnel records which can serve as a guide for promotions at any time. Thus the executive always has the whole picture before him and not that most recent in his mind. Such records should be kept by even the smallest company organization.

Promote on his or her qualifications for the new job—not the old one. This has been one of the gravest mistakes made in business. We too often judge an individual solely on top performance in the post now being held. This can never be assurance that he or she will be as good on the next step up the ladder.

It is always safest to consider not only his or her qualifications on the job now held but also that on the new job. Doing so gives us more assurance that the person we select will be the right individual.

Books on Pesticides

WEEDS—Second Edition (1955)

W. C. Muenscher

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with reference to chemical methods of recent discovery $10.00

CHEMICAL BUSINESS HANDBOOK

Dr. John H. Perry

1,300 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication $17.00

INSECT PESTS OF FARM, GARDEN and ORCHARD Fifth Edition (1956)

Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustrations. 661 pages $8.50

DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatability of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations $8.50

APPLIED ENTOMOLOGY, Fifth Edition

H. T. Fernald and Harold H. Shepard

This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 385 pages $7.00

THE GARDENER'S BUG BOOK (1956)

Dr. Cynthia Westcott

The Complete Hankbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound $7.50

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U. S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages $8.00

WEED CONTROL

W. W. Robbins, A. S. Crafts, and R. N. Raynor

A textbook-manual presenting a modern view of the rapidly developing field of chemical weed control. Reports in detail the research on which most modern herbicide usage is based. Weeds, their reproduction, prevention, biological control, chemicals in weed control. Herbicides, foliage contact applications, hormone-like substances, root applications, evaluations of combinations of chemical applications. Weeds of grasslands and turf. Special weed problems, cropped and uncropped areas. Published 1952. 503 pages, 155 illustrations $8.00

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Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful..... $10.00

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BUG OF THE WEEK

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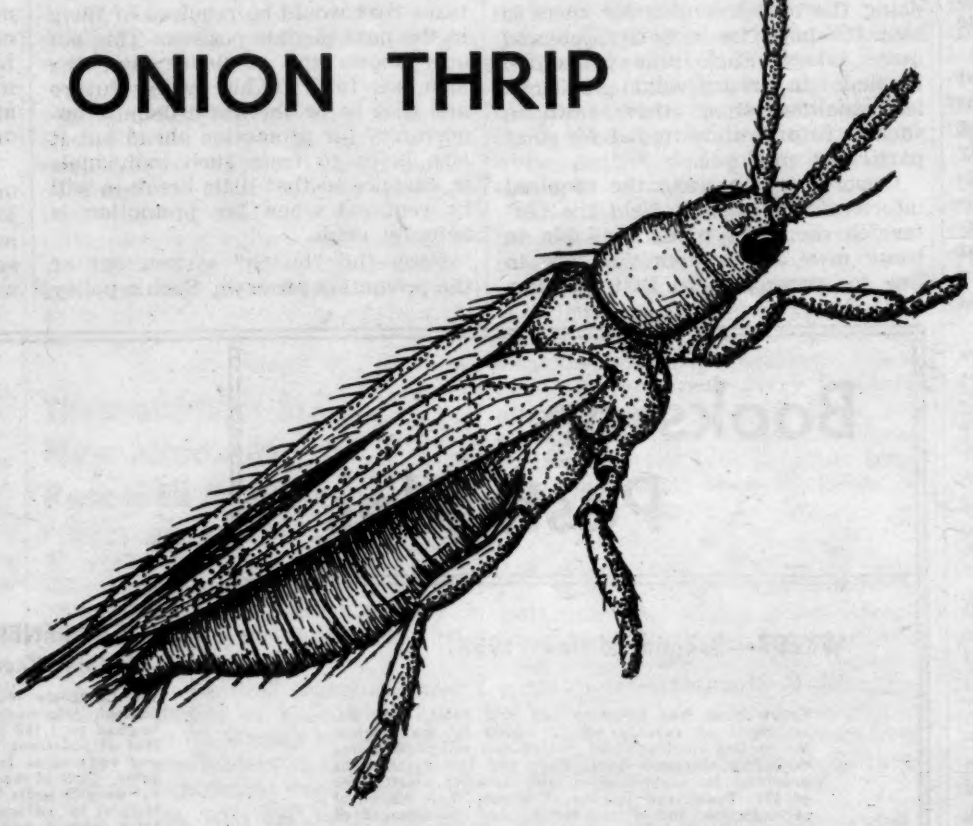
ONION THRIP



How to Identify

These thrips are rather slender, active insects, pointed at each end. Very minute, they are not easily seen with the naked eye, although some reach the length of about one-twenty-fifth of an inch. Their color is yellow.

Habits of Onion Thrip

Females, which have very slender wings, lay eggs within leaves or stems of plants, and these eggs hatch in about a week. In another two to four weeks, the nymphs become full grown after passing through four instars or periods of development. Two of these periods are spent in the soil without taking any food. As soon as they become adults, female thrips return to the plant and begin laying eggs to start another generation. Entomologists indicate that there are five to six generations a year, and that the bugs can be found in all stages together in the summer months.

Damage Done by Onion Thrips

These insect pests attack stems and leaves, sucking sap and giving the plant a sick appearance. Tips of leaves become blasted and distorted and if the attack is prolonged, the entire plant may wither, turn brown in color and finally fall over. Dry seasons are the time of worst destruction, and entire fields can be destroyed by this tiny pest.

Control of Onion Thrip

A number of pesticidal materials have been named by USDA and state experiment stations, but the pest is difficult to reach because it is found in greatest numbers between the leaf sheaths and the stem, somewhat out of reach of the toxic material. After the pesticides have been applied in correct dosages and sufficient time allowed so that illegal residues will not be present at harvest time, some cultural practices are recommended. These include the raking up of onion tops after harvest, and burning them to dispose of onion thrips that might survive the winter otherwise. Local county and state authorities should be consulted for kinds and amounts of pesticides to be used for control of onion thrips, in order to avoid excessive residues.

Drawing of the Onion Thrip furnished Croplife by the artist, Marvin Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolic 1, Minn.

INSECTS

(Continued from page 5)

major problem. The red-leg grasshoppers are becoming adult along with the differential hopper. We are beginning to get reports of threadworms and other parasites in hoppers and of mites on grasshopper wings. Parasites do some damage to hopper populations but not enough to take the place of chemical control. The mites on the wings do very little damage and do not affect the total population.

Corn leaf aphids have been reported on grain sorghums from all of the south half of Iowa. Hot, dry weather may slow down the development of these populations and allow predators to further reduce them.

Corn prionus destroyed an acre of corn in Plymouth County. It also destroyed corn in Muscatine County a month ago. This insect is found occasionally in southern Iowa in first year corn on sod ground. It normally lives on heavy-stemmed grasses. The adult is a long-horned beetle and the larva resembles the round headed apple tree borer.—Harold Gunderson.

Austin Cole Named to New Percy Kent Post

KANSAS CITY—Austin Cole, Jr., has joined the Percy Kent Bag Co., Kansas City, and will have supervision of the Chicago and New York areas for the firm, Richard K. Peek, president, has announced.

A graduate of the Massachusetts Institute of Technology, Mr. Cole for the past 20 years was vice president and general sales manager of the H. C. Cole Milling Co., Chester, Ill., a firm founded by his great great-grandfather.

Mr. Peek also announced that the New York offices of Percy Kent are now located at 45 Rockefeller Center after nearly 70 years in lower Manhattan. Chicago offices are temporarily at 205 West Wacker Drive.

Chipman Names Personnel In New Portland Plant For Manufacturing 2,4-D

PORTLAND, ORE. — Chipman Chemical Co., Inc., has announced a number of personnel changes in connection with the firm's new basic 2,4-D manufacturing plant here. The new facility is now nearing completion.

M. L. Somerville, development engineer of Chipman's executive offices, Bound Brook, N.J., is acting superintendent of the new facilities. He has been engaged in the planning and engineering of the plant from its inception.

Gilbert Jordan has been promoted from chemist to assistant superintendent of the new operations, and Linden E. Harris, former assistant district manager of the Northwest district, is returning to his former duties after having spent a year in the east developing the herbicide research and technical service program.

Tom E. Cowan, who has been acting as assistant manager, has been assigned to sales for western Oregon and Washington, as well as general agricultural industrial sales and advertising for the Northwest.

Joe Durst has been promoted to the position of district office manager, replacing Elwood Hannah who has resigned.

All of these changes and promotions are effective immediately according to Keith Sime, district manager at Portland, Oregon.

BEEF GRASSLAND DAY

ST. PAUL—The fourth annual beef grassland field day will be held at the University of Minnesota agricultural experiment station at Rosemount, Minn. Sept. 18.

Dry Weather, Bugs Plague Growers in Southern Area

MEMPHIS, TENN. — The Mid-South's principal crops—cotton, corn and soybeans—are suffering from hot, dry weather and insects.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee said in their weekly crop surveys that the relief brought 10 days ago by scattered showers has disappeared.

"The farmers need rain," the farm officials said.

In addition to dry weather, farmers are facing an increasing number of weevils in their cotton fields and poisoning is widespread over much of the Mid-South.

In Mississippi, T. M. Waller, extension cotton specialist, said: "Cotton in some areas is blooming in the top and cutting out. The plants are heavily laden with bolls despite drouthy conditions."

Scattered areas in North Mississippi and larger areas in the southern part of the state have received ample rainfall. Scattered showers have interfered with cotton insect control and cultivation. Boll weevil infestations are spotty with some counties reporting good control, while others indicate the weevils are in extremely heavy infestation.

High quality Congo and Charleston Grey watermelons are being marketed from Central and North Mississippi growing areas, according to Chesley Hines, extension horticulturist.

Hot weather clamped down in earnest on Arkansas and some crops —especially corn—in certain areas were beginning to show effects.

The agricultural extension service said most early corn is made, but late plantings are firing on uplands where moisture has been inadequate.

Scattered rains over the weekend helped corn, feed and hay crops, said an extension service spokesman.

In cotton areas, weevils and bollworms were becoming a problem, but a spraying program was reported keeping them fairly well under control.

A good early apple crop has been harvested and harvest of a good late Elberta peach crop is under way. Tomato harvest was reported complete in Bradley and Cleveland counties, and the Chicot county okra crop was being harvested last week.

A good rain is needed in Southeast Missouri, the extension service reported. W. F. James, Pemiscot County agent, said the cotton crop is in fine shape and heavily fruited. Corn is maturing and the pods are setting on beans.

The serious threat of bollworms has passed without extensive damage, Mr. James said. However, farmers should continue to make weekly checks, he added.

The farm outlook in West Tennessee is excellent, extension service officials in Jackson, said.

Leading farmers are predicting the best corn and cotton yields in several years.

H. T. Short, district agent at Jackson, said that although some areas need rain cotton has had enough dry weather to reach a good stand without excessive damage from insects. Earlier boll weevil and other insects were reported to be causing considerable damage.

Recent hail and rain did severe damage to crops in Lake County but other areas have not suffered. Counties reporting a need for more rain include Lauderdale, Haywood and Henderson.

TEXAS PLANT FOOD EDUCATIONAL SOCIETY—Meeting at the Galveston fertilizer conference were these members of the Texas Plant Food Educational Society. Left to right, they are: Dr. Duke Thornton; Dr. D. R. Patterson, Texas A&M College, College Station, Texas; Dr. Niven Morgan, American Potash Institute, Shreveport, La.; Dr. J. B. Page, Texas A&M; Ivan Gilliland, International Minerals & Chemical Corp., Fort Worth, Texas; Floyd Prather, Central Texas Fertilizer Co., Inc., Comanche, Texas; and Gerald Wakefield, Olin Mathieson Chemical Corp., Little Rock, Ark.

Dr. A. D. Weber Named To Head Agricultural Council in Colorado

FORT COLLINS, COLO.—Dr. Arthur D. Weber, dean of agriculture at Kansas State College, was elected general chairman of the Great Plains Agricultural Council at the end of the Council's recent meeting at Fort Collins, Colo.

The council is made up of agricultural leaders in the 10 Great Plains states of North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado and New Mexico.

Mr. Weber also is chairman of a North-Central regional committee composed of deans and directors of agriculture in 13 North-Central states.

The Great Plains Council recommended that a controlled-climate laboratory be created to study plant growth and development under varying climatic conditions and that the national laboratory be located in the 10-state area, and also that a study be made of conservation and efficient use of rainfall, control of wind and water erosion in dryland crop production, and research on ways to slow down evaporation of moisture from the soil.

The council said that field experiments could help devise new methods of managing soils, crops and residues to reduce wind and water erosion and to conserve soil moisture. It also called for increased research on the need to adjust farming systems in the Great Plains to better fit them to market potentials.

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American Potash Sales, Earnings Show First Half Gain

LOS ANGELES — Sales and earnings of American Potash & Chemical Corp. for the first half of 1956 were higher than in the comparable period a year ago, Peter Colefax, president, said recently in an interim report to shareholders.

Net sales for the six months ended June 30, 1956, totaled $19,956,846 compared with $13,828,853 for the corresponding months of 1955.

Net income for the first half of this year amounted to $2,396,625. After deducting preferred dividend requirements, earnings were equal to $1.39 per share on the 1,647,069 shares of Class A and common stocks outstanding. For the first six months of 1955, net income was $1,847,898, equal after preferred dividends, to $1.18 a share after adjusting for the two-and-one-half for one stock split in April of this year.

For the second quarter of this year, the three months ended June 30, sales amounted to $10,460,918 as compared with $7,077,619 in the same quarter a year ago. Net income was $1,201,717, or 70¢ per share after deducting preferred dividends, against $1,011,264, or 65¢ per share a year ago.

The board of directors of the firm has declared a quarterly dividend of 25¢ a share on the Class A and common stocks. The directors also declared the quarterly of $1 a share on the $4 cumulative preferred stock, Series A. The dividends are payable Sept. 15 to shareholders of record Sept. 1.

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Four Bemis Sales Executives Given New Assignments

ST. LOUIS—Four Bemis Bro. Bag Co. sales executives have been assigned new duties.

R. V. Scott, manager of the Chicago general sales division, will attend the fall session of the advanced management course at Harvard Business School. Following this session, Mr. Scott will be appointed to a new executive position within the company.

W. F. Mulvaney, supervisor of multiwall bag sales, will succeed Mr. Scott as manager at Chicago. Mr. Mulvaney has been with the firm since 1939, when he started as a clerk at the Peoria plant. He was subsequently sales correspondent, factory representative, assistant sales manager and sales manager at Peoria before his transfer to the St. Louis general offices.

W. J. Ray, supervisor of textile bag sales, will succeed Mr. Mulvaney as supervisor of multiwall bag sales. Mr. Ray joined Bemis at its Indianapolis plant in 1933. He was assistant sales manager there when transferred to the general offices as assistant textile bag sales supervisor in 1953.

C. L. Ferguson will assume the responsibilities of textile bag sales supervisor, while continuing as supervisor of waterproof bag sales. Mr. Ferguson joined the company at its St. Louis bag factory in 1922. He was appointed manager of the waterproof department there in 1943 and was transferred to the general offices in 1952.

Books on Fertilizers And Their Use

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A symposium — published jointly by the American Society of Agronomy and the National Fertilizer Association.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents, and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color.... $4.50

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Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trace-element plant foods. 288 pages, 106 illustrations, cloth bound $3.00

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An entirely new, one-of-a-kind book. It is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color $3.00

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Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages.. $8.00

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Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages $5.50

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A valuable book for the fertilizer salesman, agricultural teacher, farmer, fertilizer agent and county agent. Deals with rock phosphate versus superphosphate and colloidal phosphate, with the origin of phosphorus, the mining and processing of the phosphate rock, granulation of superphosphates, fixation of phosphates in the soil, losses of phosphorus and replenishments, phosphorus in nutrition, radioactive phosphorus, basic slag, fused and sintered phosphates and TVA research data on phosphates from field tests in 13 states. 176 pages and well illustrated $2.75

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Lime-Phosphate-Potash Effect Comeback for Worn-Out Hay Field

CHICAGO—A wornout field, deliberately overcropped to cut yields to zero, produced 4½ tons of good alfalfa hay per acre, when lime and phosphate-potash fertilizer were added to the soil in recent Minnesota tests.

The results of these tests at the University of Minnesota's Northeast experiment station at Duluth, were summarized by the Middle West Soil Improvement Committee. W. W. Nelson, soils specialist at the experiment station, reports that in the tests, the soil was "mined" until oat yields "were down to zero to 10 bu. an acre, no barley would grow and potato yields were about 10 bu. an acre and the potatoes were just good-sized marbles."

To determine whether this soil could be made productive again with fertilizer and lime, the field was divided into four parts, with four different treatments, Mr. Nelson reports.

The first area was left in its run-down state; the second got lime, the third received phosphate and potash and the fourth, lime, phosphate and potash.

The entire field has been hay since a legume-grass mixture was first seeded in the "rebuilding" program back in 1939.

"Today," says Mr. Nelson, "the untreated area is mostly moss, with small willows and a thin grass stand. The limed area has a few alfalfa plants, but mostly grass that yielded two tons of fair hay in 1955.

"The third area which received phosphate and potash now has some red clover and a fair grass stand that yielded nearly three tons of hay last year.

"The area where lime, phosphate and potash went on, has a good alfalfa stand which produced about 4½ tons of good hay in 1955."

FLORIDA CONSUMPTION

TALLAHASSEE, FLA. — Florida fertilizer consumption during June totaled 156,057 tons, according to the state Department of Agriculture. This total included 87,262 tons of mixed goods and 68,795 tons of materials.

esearch Unit of anogen, Inc., in ew Laboratory

WOODSTOCK, ILL. — Panogen, c., recently moved its research and velopment department into a new boratory just south of here which shares with the Morton Salt Co. nogen, manufacturer of seed disfectants and seed treating equipent, is affiliated with the Morton mpany.

Located only a few miles from the ain Panogen plant at Ringwood, , the modern laboratory is uipped to provide facilities for the velopment of new and improved ed and soil treating chemicals and r a number of other functions. hese include biological testing of e effects of treating all types of ed, propagation of bacteria and ngi for testing purposes, and the reening and analysis and testing of w pesticides. A modern pilot plant rmits the study of the most econmical ways to manufacture new oducts. In addition, the laboratory equipped to test seed samples subitted by seedmen customers.

Panogen, a non-settling mercurial quid seed treatment, was introduced to the U.S. and Canada in 1948 by etrus Hellman, a member of the wedish firm of A. B. Casco. Acceptnce of the Panogen was so rapid hat Mr. Hellman soon established anufacturing facilities in the U.S. anogen, Inc., is a U.S. corporation hich distributes its products in anada, the U.S. and Latin America. he Swedish corporation, A. B. Casco, distributes Panogen in the eastrn hemisphere.

Liquid Panogen was first conceived y Dr. Adolph Zade, a German who, o escape the Nazis, fled to Sweden here he completed development of anogen under the sponsorship of the . B. Casco firm. It was first marketed in Sweden in 1938.

For a number of years, organic ercurial compounds had been conidered the most effective known seed reatment for controlling a wide ange of seed and soil-borne diseases. espite their proved effectiveness, owever, farmers and custom seed reaters had been slow to accept them ecause they had been available only n the form of "dust" which was acually dangerous to use.

The disadvantages of dust were artly overcome by developing the slurry" method—mixing water with he dust. However, this slurry mixure was not a true solution and would settle out unless constantly gitated.

With Dr. Zade's development of the iquid Panogen, the company perfectd an automatic liquid seed treater. urther developments permitted the se of Panogen in slurry and dust reaters as well as in all types of iquid and mist type seed treaters.

Panogen, the company says, is now widely accepted as useful in protecting wheat from stinking smut, seed decay and seedling blight; oats from loose and covered smut, Victoria blight, seed decay and scab; barley from covered smut, black loose smut, stripe and seedling blight; sorghum from loose and covered smut and seed rot; and a number of other seeds from similar diseases.

President of Panogen, Inc., is Petrus Hellman who came to the U.S. in 1948 for the Swedish firm of A. B. Casco, original marketer of the liquid mercurial seed treating compound. Manufacturing facilities were set up in the U.S. a short time later, Panogen affiliating with the Morton Salt Co.

Treating seed in the new laboratory of Panogen, Inc., at Woodstock, Ill., is Mrs. Margareta Heineman. Mrs. Heineman received training as a chemist in Sweden and helped introduce Panogen in the U.S. She is in charge of field testing and liaison with the U.S. Department of Agriculture and colleges for Panogen.

FORMER DUPONT CHEMIST DIES

WILMINGTON, DEL.—Dr. Arthur D. Holmes, 71, formerly a chemist with E. I. duPont de Nemours & Co., Inc. and professor emeritus of chemistry at the University of Massachusetts, died July 19 at his home in Amherst, Mass. His death came following a long illness.

QUACK GRASS IN CORN—More than 100 participants in the Second Annual Weed Day held recently at the New York State College of Agriculture, Ithaca, were told by specialists that some chemicals "look particularly promising" for controlling quack grass when used in combination with cultivation. Here the group studies the effect chemicals have had on quack grass in Cornell corn test plots. The field day was sponsored by the agronomy and vegetable crops departments at Cornell.

TRACE ELEMENTS MAKE DIFFERENCE—Treating soil in South Texas with molybdenum, copper and zinc will increase growth of legumes, according to experiments made on the King Ranch near San Antonio during the past two years. In the picture above, Nico Diaz, left, King Ranch agronomist, and Charles True, agronomist for the Southwest Foundation for Research and Education, compare legumes treated with phosphate and molybdenum, as seen at left, with those treated with phosphate alone. Although yield increases ranged from 10-15% to 40% in exceptional cases, it is emphasized that the experimental work with trace elements is still in preliminary stages and that more information must be obtained to determine what form and quantities of trace minerals are best for application. The experiments were conducted with the cooperation of the King Ranch, the Pel-Star Cattle Co., the Twin Oaks Ranch, Swift & Co. and Climax Molybdenum Co.

Agronomy Field Day Planned for W. Virginia

MORGANTOWN, W. VA. — Some 14 different agronomy research projects will be discussed and exhibited by research scientists of the West Virginia University Agricultural Experiment Station during the 1956 Agronomy Field Day, to be held at the Ohio Valley Experimental Substation, Aug. 9.

The purpose of the Field Day is to provide an opportunity for farmers and other interested persons to visit the Substation and see the research being conducted there. Most of the research is based directly on farming problems in the Ohio Valley area.

The experiments to be presented and discussed during the field day include crop variety yield trials with soybeans, corn, sorgo, tobacco, and alfalfa. Management experiments include crop rotations, seedbed preparations, and rates of seeding corn; and fertilization work is being done with corn and legumes. The use of chemicals in controlling weeds in corn is also being tested at the Substation.

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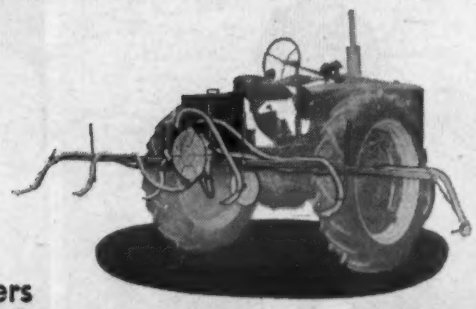

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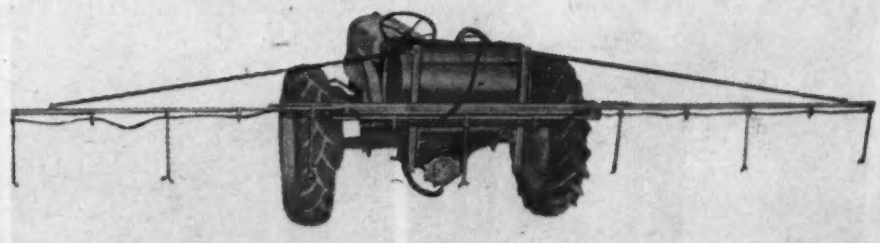

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AT TEXAS PLANT FOOD MEETING—The record-breaking crowd of nearly 300 attending the Southwestern Fertilizer Conference and Grade Hearing at Galveston, Texas on July 18-20, included many prominent members of the fertilizer industry. The top photo shows Sid Keel, International Minerals & Chemical Corp., Chicago; San Nevins, Olin Mathieson Chemical Corp., Little Rock, Ark.; Warner Anthony, Farm Service, Inc., Opelousas, La.; Jack Dulaney, Allied Chemical & Dye Corp., Bowling Green, Ky.; Frank Reedy, Green & Reedy Fertilizer Plant, Franklinton, La.; and Joe Wright, Texas Farm Products Co., Nacogdoches, Texas.

Second row: Len Gopp, International Minerals, Chicago; Ken Crawford and Don Hahler, Southwest Chemical Co., McAllen, Texas, Sinclair McCoy, International Minerals, Chicago; Everett C. Horne, Bradley & Baker, New York; Bob Linderman, International Minerals, Chicago; Dick Goldthwaite, Monsanto Chemical Co., St. Louis, Mo.

Third row: Gedge Gale, Kelly, Weber & Co., Lake Charles, La.; Dr. Proctor W. Gull, Spencer Chemical Co., Kansas City, Mo.; Barney Grimm, Wonder-Gro Fertilizer Co., San Antonio, Texas; Lee Alberts, Southwest Potash Corp., Little Rock, Ark.; F. L. Enlow, Delta Fertilizer Co., Helena, Ark.; M. K. McConnell, Commercial Solvents Corp., Rayville, La.; and Fred Shuman, Farmers Fertilizer Co., Texarkana, Texas.

Fourth row: Walter Young, Hi-Yield Plant Food Co., Mt. Pleasant, Texas; Dr. John R. Taylor, Jr., Grand River Division, Deere & Co., Tulsa, Okla.; Dean Smith, Hi-Yield Fertilizer Co., Bonham, Texas; W. H. Appleton, Potash Company of America, Atlanta, Ga.; Dr. Willard H. Garman, National Plant Food Institute, Washington, D.C.; and Bob McConald, Potash Company of America, Carlsbad, New Mexico.

Fifth row: W. B. Porterfield, Jr., National Potash Co., New York; Fred Broadway, National Potash Co., Montgomery, Ala.; Mr. Linderman; Ralph Boynton, U.S. Potash Co., Atlanta, Ga.; Bill Tyler, Sulphur Springs, Texas; and Joe Sharp, Spencer Chemical Co., Kansas City, Mo.

Sixth row: Bill Mitchelson, Spencer Chemical Co., Dallas, Texas; Dr. Proctor Gull; Harold Trammell, Farmers Fertilizer Co., Texarkana, Texas; S. B. Tatem, Swift & Co., Houston, Texas; Lee Gray, Swift & Co., Shreveport, La.; Austin Cooke, Swift & Co., New Orleans; John Carlisle, Jacksonville Fertilizer Co., Jacksonville, Texas; and Jack Taylor, Arcadia Cotton Oil Co., Arcadia, La.

GOLFERS — Douglas Kelly, Monsanto Chemical Co., El Dorado, Ark.; Sam Clement, Monsanto, St. Louis, Mo.; Dr. Russell Coleman, National Plant Food Institute, Washington, D.C.; Tom Wright, Texas Farm Products, Nacogdoches, Texas; and Gerald Millard, Nacogdoches, Texas. This photo taken at the Galveston meeting of Southwestern Fertilizer Conference.

SOUTHWESTERN MEETING

(Continued from page 1)

ple" in that anyone qualifying as a farmer would get a check from the government every month. The farmer could then grow anything he wanted to as long as it is sold on the free market. The only details that would have to be worked out by the government would be that of deciding who would qualify as a farmer and the amount of the check that would be paid.

The Southwestern Annual Fertilizer Grade Hearing was held Friday, July 20. Dr. J. B. Page, Texas A&M, College Station, Texas, presided for Dr. J. F. Fudge who was unable to attend because of illness.

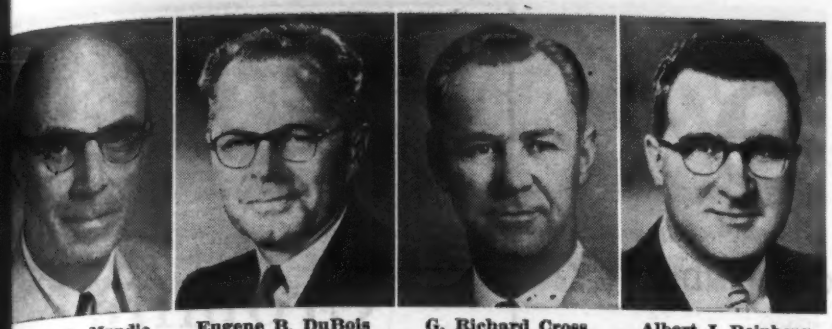
Dr. M. B. Sturgis of Louisiana mentioned that the pattern of fertilizer consumption in Louisiana was toward a 1-4-4 ratio at planting time with the nitrogen applied at side dressing time. He pointed out that the vast amount of nitrogen that has been used in Louisiana has created a need for more lime since most of the nitrogen materials are on the acid side. Louisiana only used 91,000 tons of lime last year where they should have used 500,000 tons and most of the 91,000 tons went on pasture, he said.

Dr. Sturgis called attention to the alluvial areas of Louisiana where only nitrogen has been used in the past and indicated that these areas will need more and more complete mixed fertilizers. At least one third of the sugar cane areas of Louisiana needs complete mixed fertilizers, whereas they are presently using only nitrogen. A need for more fertilizers on pastures was stressed. Dr. Sturgis estimated that the Louisiana farmers were only using 10% of the fertilizers on pastures that they profitably could.

Parks Yeats, director of the feed and fertilizer division for the state of Oklahoma, represented Oklahoma and Dr. M. K. Thornton of College Station, Texas, reported for Texas. Arkansas was reported on by Dr. Dale Hinkle, Fayetteville, Ark. Dr. Hinkle revealed that the tonnage of mixed goods in Arkansas for the year ending May, 1956, was 174,552 tons. The tonnage for 1955 was 155,105 tons. The plant nutrients in all fertilizers jumped from 111,633 tons in 1955 to 114,662 in 1956.

It was reported by the officials that East Texas, Louisiana and Arkansas need more lime. The authorities mentioned that they would like to have a minimum of 24 units of plant food in the grades registered in the Southwest. There was some discussion on this point and it was decided that the 24 minimum unit problem would be referred to the plant food committees of each state concerned.

The Resolutions Committee, comprising Dr. M. B. Sturgis, L.S.U.; Gerald Wakefield, Olin Mathieson Chemical Corp., Little Rock, Ark.; and James Dawson, Jr., of Fidelity Chemical Corp., Houston, reported on various telegrams and resolutions forwarded during the meeting.



James A. Mundie | Eugene B. DuBois | G. Richard Cross | Albert J. Reinberg

ulton Bag Names Members of Sales taff to New Posts

NEW ORLEANS, LA. — Four new ppointments in the sales organiza- on of Fulton Bag & Cotton Mills ve been announced by Jason M. lsas, vice president and general man- ger of the company's bag division.

Named to the post of general sales anager, bag division, is Eugene B. uBois, Minneapolis. Mr. DuBois has een assistant manager of Fulton's linneapolis branch and in his new osition will be headquartered at gen- al offices of the company's bag di- ision in New Orleans.

Succeeding him as assistant man- ger in Minneapolis is Albert J. Rein- erg, Kansas City, Kansas, who was ormerly assistant manager of Ful- on's Kansas City branch.

G. Richard Cross, Minneapolis, for- nerly a Fulton sales representative n the Minnesota area, has been amed sales manager, bag division, of he company's Chicago sales office.

James A. Mundie, New Orleans, as been appointed account executive, ag division, in Fulton's New York ales office. Mr. Mundie was formerly anager of the company's New Or- eans branch multiwall bag depart- ent.

Mr. DuBois joined Fulton in 1926 s a sales representative at the com- any's Minneapolis branch and sub- sequently became sales correspondent and assistant manager.

Mr. Reinberg, a native of Peruque, Mo., was educated in St. Louis. He joined Fulton's office in that city in 1934, and two years later was transferred to the company's Minneapolis plant to handle canvas sales. He was later promoted to sales representative and then transferred to Kansas City, where he later was made assistant manager.

Mr. Cross joined Fulton's Minneapolis branch shortly before World War II. Following his release from service, he re-joined Fulton and later was made sales representative in Minneapolis.

Mr. Mundie was educated at the University of Buffalo and Colgate University. He joined Fulton in 1948 at the company's Dallas branch and two years later was transferred to the sales division of the multiwall paper bag department in New Orleans, where he subsequently became manager.

OLIN MATHIESON APPOINTS

BALTIMORE, MD.—Olin Mathieson Chemical Corp. has announced a number of new appointments in its industrial chemicals division. These changes include James G. Chalfant, new market development manager; Bernard N. Schrauf, market research manager; Norman C. Schultze, technical service manager. All three men will be located in the division's headquarters at Baltimore.

Thomas F. Gogan Named to Boston Post by Monsanto

ST. LOUIS—Thomas F. Gogan of St. Louis has been named Boston district sales manager for Monsanto Chemical Co.'s Inorganic Chemicals Division, it was announced here by Tom K. Smith, Jr., division director of marketing.

Mr. Gogan, who has been manager of distributor sales for the division, assumed his new duties Aug. 1. He is replacing Thornton S. Jesdale, who is leaving the company.

A native of Massachusetts, Mr. Gogan received a B.S. degree in chemistry from Tufts College in 1946. He joined Monsanto's former Merrimac Division as a sales trainee the same year. He was named New York branch sales manager for that division in 1952 and came to St. Louis in 1954 when sales activities of that division were consolidated into the present Inorganic Chemicals Division.

New Agricultural Statistician for Purdue

LAFAYETTE, IND. — Robert E. Straszheim has been appointed head of the department of agricultural statistics in the Agricultural Experiment Station at Purdue University, it has been announced.

Since the work in agricultural statistics is carried on cooperatively with the United States Department of Agriculture, Mr. Straszheim is also agricultural statistician in charge for the USDA by cooperative agreement.

Mr. Straszheim has been an associate on the agricultural statistics staff at Purdue since 1937. Prior to that time he was assistant statistician in similar offices in Ohio, Illinois and New York. For three years immediately before coming to Purdue he was with the USDA in Washington, D.C. and supervised statistical work in the ten Corn Belt states for the Agricultural Adjustment Administration. He replaces M. M. Justin as head of the department. Justin retired June 30 after serving 31 years as department head.

AGRICULTURIST DIES

PEWEE VALLEY, KY. — R. H. Proctor, 67 years of age, assistant executive secretary of the Kentucky Farm Bureau, died July 23, in a hospital here. He had lived in Louisville for the past 13 years, and at the time of his death resided with a son. He had been a director of the Farm Bureau, and connected with the secretarial post since 1944. Prior to that he had served for nine years as president of the Owen County, Kentucky, Farm Bureau, and had been on the state board of directors for two years.

Fertilizer Helps Wisconsin Corn Beat the Drouth

CHICAGO — Fertilized corn averaged 85 bu. per acre during last summer's severe drouth, reports the Middle West Soil Improvement Committee, in summarizing results of 48 Wisconsin fertilizer demonstrations during 1955.

The statewide corn yield averaged 50 bu. per acre last season, says C. J. Chapman, University of Wisconsin extension soils specialist. Heavy fertilizer applications paid off in extra high yields on some farms, he reports.

Yields averaged 142 bu. per acre on one field on the Hale Bremmer farm in Green Lake County, when 480 lb. of 0-20-20 fertilizer was plowed down, 250 lb. of 3-9-27 was added in the row, the corn was sidedressed later with 80 lb. of nitrogen fertilizer.

Mr. Bremmer got 77 bu. of corn per acre on plots that received 200 lb. of 5-20-20 starter fertilizer at planting time.

Kenneth Swenson, of Burnett County, harvested 117 bu. per acre from a field that received heavy fertilizer applications, compared to 73 bu. on other fields that got only a starter fertilizer.

Fertilized Corn Can Utilize Water Better, Iowa Agronomist Says

AMES, IOWA—Trials have shown that fertilized corn will produce more bushels per acre for each inch of water than will unfertilized corn, according to John Pesek, agronomist at Iowa State College.

He cites soil samples which showed that fertilized corn made use of water 2 feet deeper in the soil than did unfertilized plantings. He says fertilizer not used by the corn in a dry year is not a loss. Experience has shown that up to 60% of some fertilizers applied to corn may carry over into the next season.

Proper use of fertilizers, combined with water conservation measures, can make the difference between a good corn crop and a poor one in a dry year, Mr. Pesek says. Contouring, terracing and lister planting offer insurance measures against water loss, particularly from runoff.

The available water supply can be stretched by a slight reduction in stand level. Mr. Pesek believes this is particularly important when the subsoil moisture supply at planting time is very low.

Mr. Pesek points out that some other crops besides corn show favorable response to fertilizer in dry years. Hay, pasture and silage crops respond well to added nutrients even when moisture supplies are well below normal.

Selling Ideas

Feedstuffs, an associated publication of Croplife, has prepared a 16-page Merchandising Handbook for dealers interested in getting a greater volume of sales and profits from animal and poultry health products. In the Handbook will be found practical merchandising ideas successfully used by retail stores.

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The regional circulation of this issue is concentrated in the Northeastern states.

Don't Worry About Lack of Land, Conservationist Says

That the U.S. could add from 100,000 to 200,000 acres of land to its producing farms if population growth should make necessary the production of that much more food and fiber, was pointed out recently by Dr. Charles E. Kellogg, assistant administrator of the United States Soil Conservation Service at a Kentucky meeting. However, Dr. Kellogg added that it is not likely that "anywhere near" that amount of land will be needed, because the continued growth in efficiency of farmers will be enough to meet most of the increase in demand that will come from a larger population.

The only additions seen by Dr. Kellogg for the present, is just enough to offset the approximately one million acres a year now lost through the expansion of cities, roads, airports, and factory sites. Such encroachments, Dr. Kellogg warned, may eventually lead to rural zoning programs that would guide city developments into areas less suited to farming.

The greatest potential for new land in the nation now lies in the coastal areas along the Atlantic Ocean around to Texas, he said, explaining that this land has been found to be capable of production through the use of modern fertilizers.

Quote

"We could not have the cars, the steel, the electric power, the ships, the coal, the oil, the houses, the radios, the bathtubs, the running water, the clothing, and the recreation we now possess if one half, or even one third, of our working force were engaged in agriculture—instead of only one ninth."—Ezra Taft Benson, Secretary of Agriculture.

Competitors Termed as Blessings in Disguise

Often in business it is almost customary to speak ill of one's competitors and to refer, in slurring terms, to their ability and integrity. We read the other day a somewhat different expression of philosophy regarding those fellow-seekers after the same business. It struck us as being worth passing along to Croplife's readers.

H. R. Isherwood, vice president of the Antimite Co., St. Louis, Mo., engaged in the highly-competitive pest control business, says that "Our competitors do more for us than our friends. Our friends are too polite to point out our weaknesses, but our competitors go to great expense to exploit and advertise them.

"Our competitors are efficient, diligent and attentive. They make us search for ways to improve our products and services.

"Our competitors would take our business away from us if they could. This keeps us alert to hold what we have.

"If we had no competitors, we would be lazy, incompetent, inattentive. We need the discipline they enforce upon us.

"We salute our competitors. They have been good to us. God bless them all!"

BIOGRAPH . . .

Kansas Professor Retires After 43 Years

Prof. Leo E. Melchers, for 35 years head of the department of botany and plant pathology of Kansas State College, retired recently. His outstanding career has had a considerable effect on thinking in the field of plant diseases, and on the development of materials for their control. Croplife is happy to salute this professor and to wish him happiness in his retirement.

Prof. Melchers came to Kansas State in 1913 and was connected with the institution continuously until his retirement, except for two years when he was engaged in some special work in mycology for the Egyptian Ministry of Agriculture, at Cairo, Egypt.

L. E. Melchers

Born in Toledo, Ohio, where he received his grade and high school education, he decided to learn greenhouse management of vegetable and flower crops. This experience opened his eyes to the field that became his chosen profession, plant pathology, commonly known as the science of plant diseases.

Professor Melchers says, "I became interested in those days in sick plants, with which I came in contact. I wanted to learn more about the cause of plant sickness and what might be done to prevent the diseases."

This was in the days when the science of plant pathology was in its infancy—there wasn't even one American textbook out on the subject, he commented. He entered Ohio State University in 1904 and completed his work for his undergraduate and graduate work, receiving his B.S. and M.S. degrees, specializing in botany and learning all that was available in plant pathology at the University and the Ohio Experiment Station.

In 1913 Professor Melchers accepted a temporary position as assistant in botany at Kansas State College.

"I didn't expect to remain over a year," he said, "as I knew I was merely filling a vacancy left by a staff member on leave of absence." At the end of the year, the position became a permanent one. Then followed his professional advancement and career at K-State. From assistant he advanced through the ranks to professor and acting head of the department in 1917. In 1919 under President William M. Jardine's administration, he was appointed head of the department.

Dr. Melchers was one of the early exponents of breeding for disease resistance in crop plants and much of his work and the work of his many students who entered the phytopathological profession has been in this field. His early work on wheat rust resistance was followed by research on disease resistance in crops and the development of resistant varieties. His leadership in the investigations of the control of milo disease of sorghum in Kansas is one of the outstanding accomplishments in the improvement of combine sorghums for the Plains area and meant much to agriculture during World War II.

In spite of much of his time being taken up with administrative duties, teaching, building up a department, and the time devoted to organizing the extension service work in plant diseases, he is the author of more than 100 scientific publications. Because of his high standing in the profession, Prof. Melchers was appointed chief mycologist in 1927 by the Egyptian government and asked to do special work in the Nile Valley. At that time he was the first American scientist ever to have received such an appointment by the Egyptian government.

Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER. THE AMERICAN BAKER. FEEDSTUFFS. MILLING PRODUCTION

MEETING MEMOS

ug. 14-15—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Wooster, Ohio, Secretary.

ug. 16-17—Safety Training School for Fertilizer Plant Supervisors, Cape Fear Hotel, Wilmington, N.C.

ug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

ug. 20-22 — Corn Belt Branch, American Society of Agronomy, Summer Meeting, Purdue University, Lafayette, Ind.

ug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

ug. 24—Grassland-Dairy Feld Day in Observance of the 25th Anniversary of Rutgers University Dairy Research Farm, Beemerville, N.J.

ug. 27-30—Course on Tank Truck Transportation of Chemicals, Michigan State University, East Lansing, Mich.

ug. 28-29—Fertilizer Meeting, Nebraska Agricultural College, Lincoln, Neb. Sponsored by the Agricultural Ammonia Institute.

ug. 30—South Carolina Plant Food Educational Society, Clemson House, Clemson, S.C.

ept. 5-7 — National Agricultural Chemicals Assn., 23rd Annual Meeting, Essex and Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

ept. 18-19—Symposium on Chemicals in Food Production, Presented by Division of Chemical Marketing and Economics, American Chemical Society, Atlantic City, N.J.

ct. 9—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, 28, Cal., Executive Secretary.

ct. 15 — Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

ct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

ct. 16-18—Fertilizer Industry Round Table, Shoreham Hotel, Washington, D.C. Vincent Sauchelli, Chief Agronomist, Davison Chemical Co., Div. W. R. Grace Co., Baltimore 3, Md., chairman.

ct. 16-18—Canadian Agricultural Chemicals Assn., Fourth Annual Meeting and Conference, Sheraton-Brock Hotel, Niagara Falls, Ontario.

ct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

ct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

ct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.

ov. 2—Joint Agronomy-Industry Work Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.

Nov. 7-9 — Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.

Nov. 11-13 — California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 19-20 — Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

Gerald Thorne, Expert On Nematodes, Joins Wisconsin Faculty

MADISON, WIS.—Gerald Thorne, nematologist who has spent the past 38 years in government service, has joined the faculty of the University of Wisconsin to teach plant pathology and zoology. Mr. Thorne's position with the U.S. Department of Agriculture at Salt Lake City, Utah, was senior nematologist at the four-state regional office of the nematology section, USDA. His area included Utah, Colorado, Idaho and Nevada. He will be succeeded in this position by Edsel C. Jorgenson.

During his work which started in 1918 at Utah State Agricultural College, Mr. Thorne has built a collection of 36,000 nematodes. It is the largest in the world, said to contain more specimens than all similar collections combined. It has been a key source of scientific knowledge in agriculture and related industries and sciences.

Author, lecturer and researcher, Mr. Thorne has written more than 70 scientific and educational works, including two large volumes of more than 1,000 pages each used as general reference and text books. The books contain more than 2,000 illustrations.

His work has been largely of a cooperative nature. He has worked with farmers, sugar and chemical manufacturers and extension service workers of many nationalities. Emphasis has been on improving crops, including sugar beets, alfalfa and tomatoes. Assignments have taken him to every state in the nation, except Maine; to Canada, Indonesia, Ceylon, Thailand, Philippines, Hawaii and elsewhere.

In 1930 he was called to Washington, D.C., where he worked three years with USDA technicians. In 1951 and 1952 he was loaned by the department to Economic Cooperation Administration (now Foreign Operations Administration) to work on problems encountered in aiding backward countries to develop modern agriculture practices.

GRAIN SANITATION IMPROVES

WASHINGTON — Since the Food and Drug Administration put its new grain sanitation standards into effect on July 1, no seizures have been made under the new rules of tolerance, reports the U.S. Department of Agriculture. The new standard makes wheat in interstate transit subject to seizure if it contains one or more rodent pellets per pint of wheat, or 1% or more by weight of insect-damaged kernels. The FDA also reports that total seizures since Jan. 5, 1955, were only 21 cars, 14 of which were seized during the first 10 months of the stepped-up inspection program.

Farmers Get Word On Benefits of Irrigating Cotton

MARSTON, MO.—Mid-South farmers were urged to "get more water into the soil rather than off the soil" during the recent Delta Farm Exposition near Marston.

The all-day exposition was sponsored by the Missouri Cotton Producers Assn. and Soil Conservation Service, attracting almost 1,000 Southeast Missouri farmers and Future Farmers of America.

Perrin Grissom, agronomist at the Delta Branch Experiment Station at Stoneville, Miss., said, "The ideal row layout and drainage system consists of field units, rather than pot-hole units, with rows laid out with a uniform slope down the row adequate for drainage but with slope gentle enough to minimize erosion.

"Land leveling done properly will facilitate the use of mechanical equipment, insure drainage, minimize erosion and prepare the land for furrow irrigation," he said.

Irrigation increased cotton yield one-half bale per acre over a four-year period in Mississippi, he said.

"My appraisal of irrigation is that it will become an integral part of cotton production. I believe it can lend more stability to yields than any other practice."

Donald Williams, administrator of the Soil Conservation Service at Washington, said the most efficient and economical use of the land may be the changing from cultivated crops to grass or trees.

This should be done, he said, only where it is shown by soil surveys to be to the farmer's economic best interest.

After discussing the soil bank, Mr. Williams called attention to "another highly important branch of our conservation banking activities"—water bank.

A major problem in this area has been too much water and its disposal, Mr. Williams said.

"The continuing general need for having a moisture reserve is evident," he said.

Land forming practices and new farming equipment were demonstrated. Bob Axon of Caruthersville, SCS irrigation engineer, spoke about basic engineering considerations and Maxwell Williams, Gideon farmer, spoke on land forming.

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